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Alaska Department of Fish and Game
Division of Commercial Fisheries
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September 1990

Abundance, Age, Sex, and Size Statistics for Pacific Salmon in Bristol Bay, 1989

by

Barry L. Stratton

State of Alaska

Steve Cowper, Governor

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ABSTRACT

Abundance, age, sex, and size data are summarized for 1989 commercial catches and spawning escapements of Pacific salmon (*Oncorhynchus*) in Bristol Bay as part of an ongoing project to collect baseline information. These data have been used to determine spawner-recruit relationships, establish spawning escapement goals, and forecast future run sizes. Age, sex, and size data for sockeye salmon (*O. nerka*) were estimated with stratified systematic sampling programs. Sockeye salmon harvests were assigned to river of origin using age and sex composition data which were combined with escapements to estimate the run to each river. Sampling efforts for other salmon species were limited. A total of 30,160,877 salmon were caught in Bristol Bay in 1989. The catch was dominated by sockeye salmon (95%), followed by chum *O. keta* (4%), coho *O. kisutch* (1%), chinook *O. tshawytscha* (<1%), and pink *O. gorbuscha* (<1%) salmon. An estimated 44,025,781 sockeye salmon returned to Bristol Bay in 1989. Of these, 28,710,103 were harvested in the commercial fishery, and 15,315,678 escaped to spawn. Sockeye salmon runs to Naknek-Kvichak District accounted for 54% of the total Bristol Bay run. Age-2.2 sockeye salmon (1984 brood year) comprised 62% of the total run, followed by age-1.3 (16%), age-1.2 (11%), and age-2.3 (9%). An estimated 39,870 chinook salmon were commercially harvested in Bristol Bay in 1989. Age-1.4 chinook salmon (1983 brood year) predominated in all sampled catches and escapements, except Nushagak District catch where age-1.2 (36%), age-1.3 (32%), and age-1.4 (31%) chinook salmon were almost equally abundant. An additional 1,172,012 chum salmon (mostly ages 0.3 and 0.4), 238,384 coho salmon (mostly age 2.1), and 508 pink salmon were harvested.

KEY WORDS: Bristol Bay, Pacific salmon (*Oncorhynchus*), catch, escapement, age composition, size composition, sex composition

INTRODUCTION

The Bristol Bay Management Area includes all waters east of a line from Cape Newenham to Cape Menshikof (Figure 1) and supports harvests of five species of Pacific salmon, including the largest sockeye salmon (*Oncorhynchus nerka*) fishery in the world. Following sockeye salmon in average abundance are pink salmon (*O. gorbuscha*) during even-years, chum salmon (*O. keta*), coho salmon (*O. kisutch*), chinook salmon (*O. tshawytscha*), and pink salmon during odd-years.

The area is divided into five fishing districts for regulation of the commercial salmon fisheries: Naknek-Kvichak, Egegik, Ugashik, Nushagak, and Togiak Districts (Figure 1). Rivers which produce major salmon runs include Kvichak, Naknek, Branch, Egegik, Ugashik, Wood, Igushik, Nuyakuk, Nushagak-Mulchatna, Snake, and Togiak Rivers. Salmon bound for Bristol Bay are also intercepted by the Japanese mothership fishery and the South Alaska Peninsula June fishery.

The Alaska Department of Fish and Game (ADF&G) conducts a variety of programs that supply information used to manage Bristol Bay salmon fisheries. These programs include (1) compiling catch statistics; (2) sampling catches for age, sex, and size data; (3) counting and/or indexing major spawning escapements; and (4) sampling escapements for age, sex, and size data. Data generated from these programs are used for in-season fisheries management, to establish optimum escapement goals, and forecast future run sizes. This report summarizes commercial catch, escapement, age, sex, and size data for Bristol Bay Pacific salmon in 1989. Abundance, age, and size data for Bristol Bay salmon have been summarized annually since 1972 (McCurdy and Paulus 1972; Paulus and Nelson 1972a, 1972b; McCurdy and Schroeder 1972; Krasnowski and Randall 1975a, 1975b, 1976; Randall and Yuen 1978; Meacham and Randall 1979; Meacham and Nelson 1980; Yuen et al. 1981; Yuen and Nelson 1983, 1984a, 1984b, 1985, 1987; Yuen and Meacham 1983; Yuen et al. 1984; Yuen 1984; Yuen et al. 1986; Cross and Stratton 1988; Yuen and Bill 1989a, 1989b; Stratton and Cross 1990).

METHODS

Catch Estimation

Commercial catches in numbers of salmon for Bristol Bay districts were taken from final operation reports prepared by fish processors. These numbers may differ slightly from final catch numbers compiled by ADF&G, Commercial Fisheries Division; these numbers are derived from sales receipts (fish tickets) given to fishermen by buyers at the time of delivery. The numbers of mature and immature Bristol Bay sockeye salmon caught by the Japanese mothership fishery in 1989 are unknown. All sockeye caught during the South Alaska Peninsula fishery (Unimak and Shumagin Islands) in June were assumed to be of Bristol Bay origin. These catch statistics were obtained from computer summaries of fish tickets (McCullough *in press*).

Escapement Enumeration

Escapements of salmon in Bristol Bay in 1989 were estimated with various enumeration methods by Commercial Fisheries Division. Sockeye salmon escapement estimates were based on counts made from towers erected on the banks of Kvichak, Naknek, Egegik, Ugashik, Wood, Igushik, and Togiak Rivers. Counts were made daily on each river bank for 10 min every hour. Counting began at the start of each hour for one bank and was followed by counting on the opposite bank. Each 10-min count was expanded into an hourly estimate to calculate the total daily escapement. Escapements in Branch and Snake Rivers, as well as various rivers in Egegik, Ugashik and Togiak Districts, were estimated from aerial surveys of major spawning grounds (Russell et al. *in press*). Side-scanning sonar, located in the lower Nushagak River near Portage Creek, was used to estimate salmon escapements for the entire Nushagak River drainage (Woolington and Bue 1989).

Age, Sex, and Size Estimation

Ages for 1989 Bristol Bay salmon runs were determined by examining scales (Mosher 1968), except that ages of sockeye salmon spawning in Branch River were determined from otoliths (Bilton and Jenkinson 1968). European notation (Koo 1962) was used to record ages; numerals preceding the decimal refer to the number of freshwater annuli, numerals following the decimal refer to the number of marine annuli. Total age from time of egg deposition (brood year) is the sum of these two numbers plus one.

Scales were collected from the left side of the fish, approximately two rows above the lateral line, in the area transected by a diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (INPFC 1963). Scales were mounted on gummed cards and impressions made on cellulose acetate cards using a heated hydraulic press (Clutter and Whitesel 1956). Salmon were measured to the nearest millimeter from the middle of the eye to the fork of the tail. Weights were taken to the nearest tenth of a kilogram. Sex was determined from morphometric characteristics.

Age, weight and length (AWL) data for sockeye salmon were collected from all district catches and major escapements by personnel from Commercial Fisheries Division. These data were also collected for (1) chinook salmon from Ugashik, Nushagak, and Togiak District catches, and Branch, Naknek, and Nushagak River escapements; (2) chum salmon from Egegik, Ugashik, Nushagak and Togiak District catches, and Nushagak River escapement; and (3) coho salmon from Nushagak River escapement and Naknek-Kvichak, Egegik, and Nushagak District catches. No pink salmon were sampled for AWL information.

Catch sampling was stratified spatially by district, while escapement sampling was stratified by major drainage. The number of time strata sampled differed among fisheries and rivers. District catches of sockeye salmon were usually sampled each fishing period from 23 June to 17 July, except when fishing periods were >24 h. When this occurred, each district catch was generally sampled once every 3 d. For dates not sampled, the age composition of sockeye salmon harvested was assumed to be the same as that estimated for the most recent catch date. Catches of other species were sampled less frequently than sockeye salmon

catches. Chinook salmon catches were sampled once in Ugashik, Togiak, and Nushagak Districts. Coho salmon catches were sampled once in Naknek-Kvichak, Egegik, and Nushagak Districts. Chum salmon catches were sampled twice in Nushagak District and once in Egegik, Ugashik, and Togiak Districts.

Sample size goals for sockeye and chinook salmon catches were set at 600 per species per strata. Goals for chum and coho salmon catches were set at 400 samples per species per strata. These goals were originally selected so that sufficient numbers of samples would be collected to simultaneously estimate the true percentage of each major age group in each stratum within 5 percentage points, 90% of the time, based on the normal approximation of a binomial proportion (Goodman 1965; Cochran 1977). However, Thompson's (1987) work on the "worst case" parameter value for the multinomial distribution suggested that our sample goals would result in simultaneously estimating the true percentage of each age group within 5 percentage points 95% of the time.

Sample size goals for sockeye salmon escapements were set at 200 per day. In practice, this daily goal was only reached during the peak of the run. Daily age composition estimates were compared using chi-square tests. Successive dates were placed in the same time stratum if significant ($P < 0.05$) differences were not found.

Age, sex, and length data for chinook salmon escapements into Branch and Naknek Rivers and coho salmon harvested in Naknek and Togiak Rivers sport fisheries were documented by Dunaway (*in press*). Age data for sockeye salmon caught in the South Peninsula June fishery were reported by McCullough (*in press*).

Estimation of Sockeye Salmon Catch Composition

Sockeye salmon harvested in Egegik and Ugashik Districts were assumed to be destined for Egegik and Ugashik Rivers, respectively. Similarly, sockeye salmon caught in Togiak River Section of Togiak District were assumed to be destined for Togiak River. Sockeye salmon harvested in other sections of Togiak District were assumed to be returning to systems not monitored for escapement or age composition and were not assigned to Togiak River. All sockeye salmon caught in set nets fished from Igushik Beach were included within total run estimates for Igushik River. Sockeye salmon harvested in Naknek-Kvichak District were assumed to be returning to Kvichak, Branch, and Naknek Rivers, while those harvested in Nushagak District were assumed to be returning to Wood, Igushik and Nushagak Rivers. Sockeye salmon caught in these districts were assigned a natal river under the assumption that age and sex compositions occurred in the same proportion within the catches as they did within the combined escapement:

$$\hat{C}_{ijk} = \hat{C}_{jk} \frac{\hat{E}_{ijk}}{\sum_{i=1}^n \hat{E}_{ijk}},$$

where:

\hat{C}_{ijk} = estimated catch of sockeye salmon from river i age j and sex k ;

\hat{C}_{jk} = estimated district catch of sockeye salmon age j and sex k ;

\hat{E}_{ijk} = estimated escapement to river i of sockeye salmon age j and sex k ;

n = number of rivers contributing to the mixed-stock catch.

RESULTS

A total of 30,160,877 Pacific salmon were harvested in Bristol Bay in 1989. Sockeye salmon dominated the catch (95%), followed by chum salmon (4%), coho salmon (1%), chinook salmon (<1%) and pink salmon (<1%; Table 1). The 1989 salmon harvest was 84% greater than the 20-year (1969-1988) average catch, and 24% greater than the 10-year (1979-1988) average catch.

The fishing season began 1 June and ended 30 September. Districts were closed to fishing unless specifically opened by management biologist's emergency orders during the following periods: 1 June until 17 July in Nushagak District; 16 June until 17 July in Egegik District; 23 June until 17 July in Naknek-Kvichak and Ugashik Districts (Table 2). Fishing in Naknek/Kvichak, Egegik, Ugashik, and Nushagak Districts prior to and after the above dates was regulated by weekly fishing periods. These periods extended from 9:00 am Monday until 9:00 am Saturday in Nushagak and Naknek-Kvichak Districts; and from 9:00 am Monday until 9:00 am Friday in Egegik and Ugashik Districts. Togiak District was regulated by weekly fishing periods from 1 June through 30 September. These periods extended from 9:00 am Monday until 9:00 am Saturday in Cape Pierce, Osviak, and Matogak Sections; from 9:00 am Monday until 9:00 am Friday in Togiak River Section; and from 9:00 a.m. Monday through 9:00 a.m. Thursday in Kulukak Section of Togiak District.

Bristol Bay Runs

Sockeye Salmon

The inshore run of sockeye salmon to Bristol Bay was 44,025,781 in 1989 (Table 3). Of these, 28,710,103 sockeye salmon were harvested by the commercial fishery and 15,315,678 escaped to spawn in Bristol Bay rivers. The run to Naknek-Kvichak District was estimated to be 23,555,022 sockeye salmon (54% of the total Bristol Bay run). This was followed, in descending order, by a sockeye run of 10,312,390 in Egegik District (23%), 5,046,489 in Nushagak District (11%), 4,898,349 in Ugashik District (11%), and 213,531 in Togiak District (<1%). Age-2.2 (1984 brood year) sockeye salmon comprised 62% of the total Bristol Bay run. Ages-1.3 (1984 brood year), -1.2 (1985 brood year), and -2.3 (1983 brood year) sockeye salmon contributed 16%, 11%, and 9% of the run, respectively (Tables 4, 5). Mean length of sockeye salmon in the total run was 529 mm and mean weight was 2.4 kg (Table 6). Females (55%) were more abundant than males (45%; NSC = non-statistical comparison).

Not included in inshore run estimates were catches of Bristol Bay sockeye salmon taken by South Peninsula fisheries. The South Peninsula June fishery catch, regulated by weekly guideline harvests, totaled 1,744,505 sockeye salmon (Appendix A.1). Guideline harvests were based on percentages of the preseason forecast for Bristol Bay catches: 6.8% for South Unimak and 1.5% for the Shumagin Islands. South Unimak fishermen harvested 1,347,548 sockeye salmon, while the Shumagin Islands sockeye catch was 396,957. Approximately 62% of the South Peninsula sockeye catch were age 2.2, ages 2.3, 1.3, and 1.2 contributed 15%, 13%, and 8%, respectively (Appendix A.1).

Chinook Salmon

An estimated 39,870 chinook salmon were harvested in Bristol Bay in 1989 (Table 1). Most were caught in Nushagak (17,887) and Togiak (11,604) Districts. Chinook salmon were also harvested in Naknek-Kvichak (6,463), Egegik (1,776), and Ugashik (2,140) Districts. Age-1.4 chinook salmon (1983 brood year) dominated catches in Togiak and Ugashik Districts and escapements in Nushagak, Branch, and Naknek Rivers, while most chinook salmon sampled in Nushagak District catch were ages 1.2 (1985 brood year), 1.3 (1984 brood year), and 1.4.

Chum Salmon

An estimated 1,172,012 chum salmon were harvested in Bristol Bay in 1989 (Table 1). Most were harvested in Nushagak (446,155) and Naknek-Kvichak Districts (308,970). The Togiak District harvest was 203,054 chum salmon, followed by Egegik and Ugashik Districts harvests of 129,365, and 84,468 chum salmon. Age-0.3 (1985 brood year) and age-0.4 (1984 brood year) chum salmon predominated in all sampled catches and escapements.

Coho Salmon

An estimated 238,384 coho salmon were harvested in Bristol Bay in 1989 (Table 1). Nushagak District coho harvest was estimated to be 77,073. Coho catches in Togiak District totaled 57,300, followed by Egegik District (49,106), Ugashik District (32,354), and Naknek-Kvichak District (22,551). Age-2.1 (1985 brood year) coho predominated in all catches and escapements that were sampled.

Pink Salmon

Pink salmon return in significant numbers to Bristol Bay in even years. The 1989 Bristol Bay harvest of pink salmon was only 508 fish (Table 1).

Naknek-Kvichak District Runs

A total of 14,216,862 salmon were harvested in Naknek-Kvichak District (Table 7). Most of the catch was comprised of sockeye salmon (98%) and chum salmon (2%). Combined catches of coho, chinook and pink salmon accounted for < 1% of the total harvest. Approximately 85% of the total district harvest occurred from 26 June to 13 July.

Sockeye Salmon

The inshore run of sockeye salmon to Naknek-Kvichak District, which included the district catch plus escapements to Kvichak, Branch, and Naknek Rivers, was 23,555,022 (Table 8). Age-2.2 sockeye salmon were the dominant (75%) age group, while age-1.3 (12%) and age-1.2 (8%) sockeye salmon followed in abundance. The Naknek-Kvichak commercial catch of 13,878,778 sockeye salmon was comprised of 71% age-2.2, 15% age-1.3, 9% age-1.2, and 5% age-2.3 fish (Table 9). Mean length of sockeye salmon harvested was 531 mm and mean weight was 2.4 kg.

An estimated 19,831,103 Kvichak River sockeye salmon returned to Bristol Bay; 11,513,603 were caught and 8,317,500 escaped to spawn (Table 10). Age-2.2 (16,351,708) sockeye salmon accounted for over 82% of the run. Spawning escapement into Kvichak River reached 85% of the eight million goal by 8 July (Table 11). The proportion of age-2.2 sockeye salmon in the escapement remained high throughout the run (Table 12). Mean length of sockeye salmon in the escapement was 516 mm.

Of the 535,357 sockeye salmon bound for Branch River, 338,597 were harvested and 196,760 escaped to spawn (Table 13). Most sockeye salmon returning to Branch River were ages 1.2 (65%) and 1.3 (26%).

The estimated total run to Naknek River was 3,188,562 sockeye salmon; 2,026,578 were harvested, and 1,161,984 escaped the fishery (Table 14). Approximately 85% of the escapement to Naknek River was obtained by 8 July (Table 15). Sockeye salmon escaping to Naknek River were mostly age 2.2 (44%), followed in abundance by ages 1.2 (22%), 1.3 (21%), and 2.3 (10%; Table 16). Mean length of sockeye salmon escaping to Naknek River was 511 mm.

Chinook Salmon

None of the 6,463 chinook salmon harvested in Naknek-Kvichak District were sampled for age, sex or size information. Chinook escapements into Branch and Naknek Rivers were mostly ages 1.4 and 1.3 (Tables 17, 18).

Coho Salmon

The Naknek-Kvichak District catch of coho salmon totaled 22,551. Most coho salmon harvested were age 2.1 (Table 19). Most (89%) coho salmon harvested in the Naknek River sport fishery were age 2.1 (Table 20).

Egegik District Runs

An estimated 8,881,079 salmon were caught in Egegik District (Table 21). Sockeye (98%) dominated the catch. Chum (1%), coho (1%), and chinook and pink salmon combined (< 1%) were minor contributors to the catch. Approximately 85% of the total district harvest occurred between 23 June and 14 July.

Sockeye Salmon

Catch and escapement of Egegik River sockeye salmon totaled 10,311,740 (Table 22). Age-2.2 (60%) and -2.3 (25%) sockeye salmon comprised the bulk of the run. The commercial fishery harvested 8,700,824 sockeye salmon. Mean length of sockeye salmon in the catch was 541 mm; mean weight was 2.5 kg (Table 23). Over 85% of the escapement into Egegik River was obtained by 7 July (Table 24). Mean length of sockeye salmon in the escapement was 548 mm (Table 25). The proportion of age 2.2 in the catch and escapement increased through time, while the proportion of age 2.3 decreased (NSC).

Chum Salmon

The Egegik District catch of chum salmon was 129,365, most were ages 0.4 (45%) and 0.3 (34%; Table 26).

Coho Salmon

An estimated 49,106 coho salmon were caught in Egegik District (Table 27). Age-2.1 (69%) predominated in the harvest.

Ugashik District Runs

An estimated 3,304,056 salmon were caught in Ugashik District in 1989 (Table 28). The catch was comprised of sockeye (96%), chum (3%), coho (1%), chinook (<1%), and pink salmon (<1%). Approximately 85% of the salmon catch occurred during 5 to 18 July.

Sockeye Salmon

An estimated 4,866,364 Ugashik River sockeye salmon returned to Bristol Bay: 65% were caught, and 35% escaped to spawn (Table 29). Most sockeye salmon returning to Ugashik River were age 2.2 (72%), age 1.3 (11%), age 1.2 (10%), and age 2.3 (6%). The commercial fishery harvested 3,185,062 sockeye salmon. Mean length of the sockeye salmon caught was 537 mm; mean weight was 2.5 kg (Table 30). Over 85% of the estimated 1,681,302 sockeye salmon which escaped into Ugashik River passed the counting tower by 18 July (Table 31). The mean length of sockeye salmon escaping into Ugashik River was 530 mm (Table 32).

Chinook Salmon

The commercial fishery harvested 2,410 chinook salmon in Ugashik District. Age-1.4 (66%) chinook salmon dominated the catch (Table 33).

Chum Salmon

The Ugashik District catch of chum salmon was 84,468 (Table 34). Ages 0.3 (63%) and 0.4 (35%) dominated the harvest. Mean length of the chum salmon caught was 566 mm. Females (78%) were more abundant than males (22%; NSC).

Nushagak District Runs

A total of 3,398,254 salmon were caught in Nushagak District (Table 35). Most of the catch was sockeye (84%), chum (13%), and coho (2%) salmon. Chinook and pink salmon combined accounted for < 1% of the catch. Over 85% of the total district harvest occurred from 26 June to 12 July.

Sockeye Salmon

The inshore run to Nushagak District, which includes district catch and escapements to Wood, Igushik, and Nushagak Rivers, was estimated to be 5,018,429 sockeye salmon (Table 36). Age-1.3 (50%) and -1.2 (33%) sockeye salmon comprised most of the run. The Nushagak District sockeye catch of 2,856,988 was comprised of 1,485,305 age-1.3 and 879,966 age-1.2 fish. Mean length of sockeye salmon harvested was 543 mm and mean weight was 2.8 kg (Table 37). Igushik Beach set nets caught 230,279 sockeye salmon (Table 38), mainly age 1.2 (41%) and age 1.3 (37%; Table 39). The proportion of age-1.2 sockeye in the catch increased through time, while the age-1.3 proportion decreased (NSC).

Of the estimated 2,552,054 sockeye salmon bound for Wood River, 1,365,644 were caught and 1,186,410 escaped to spawn (Table 40). Age-1.3 and -1.2 sockeye salmon comprised 52% and 43% of the Wood River run. Over 85% of the spawning escapement into Wood River was obtained by 8 July (Table 41); mean length of sockeye salmon in the escapement was 538 mm (Table 42).

An estimated 1,232,495 Igushik River sockeye salmon returned to Bristol Bay; 770,885 were harvested and 461,610 escaped into the river (Table 43). The Igushik River run was mostly ages 1.3 (51%) and 1.2 (41%). Over 85% of the escapement entered the river by 14 July (Table 44), and the mean length of sockeye salmon in the escapement was 557 mm (Table 45). The proportion of age-1.2 increased through time in Igushik River escapement, while the proportion of age-1.3 decreased (NSC).

Of the estimated 1,233,880 sockeye salmon bound for Nushagak River, 720,459 were caught and 513,421 escaped into the river (Table 46). Sockeye salmon returning to Nushagak River were mostly ages 1.3 (45%) and 0.3 (40%). Over 85% of the escapement passed the sonar counters near Portage Creek by 7 July (Table 47). Age-1.3 (45%) and age-0.3 (37%) sockeye accounted for most of the escapement. Mean length of the escapement was 548 mm (Table 48).

Chinook Salmon

An estimated 17,887 chinook salmon were caught in Nushagak District (Table 49). Most chinook salmon caught were ages-1.2 (36%), -1.3 (32%), and -1.4 (31%). Mean length of chinook salmon in the catch was 697 mm; mean weight was 6.6 kg. An estimated 78,302 chinook salmon passed the sonar site on Nushagak River (Table 50). The age composition of chinook salmon in the escapement was estimated to be 53% age 1.4, 26% age 1.3, 14% age 1.2, and 6% age 1.5 (Table 51). Subsistence catches from Lewis Point were comprised mostly (63%) of age-1.4 chinook salmon (Appendix A.2).

Chum Salmon

A total of 446,155 chum salmon were caught in Nushagak District (Table 52). Age-0.3 and -0.4 chum salmon comprised 82% and 17% of the harvest. Mean length of chum salmon in the commercial catch was 560 mm, and mean weight was 2.9 kg. An estimated 377,512 chum salmon passed the Nushagak River sonar counter in 1989 (Table 53). This escapement was mostly comprised of age-0.3 (79%) and age-0.4 (20%) chum salmon which had a mean length of 574 mm.

Coho Salmon

A total of 77,073 coho salmon were caught in Nushagak District (Table 54). Age-2.1 coho salmon comprised 89% of the harvest. Mean length of coho in the catch was 541 mm; mean weight was 3.1 kg. Females (58%) were more abundant than males (42%; NSC). An estimated 84,707 coho salmon escaped into Nushagak River (Table 55). The escapement consisted of age-2.1 (88%), age-1.1 (9%), and age-3.1 (3%) coho salmon. Mean length of this escapement was 531 mm.

Pink Salmon

The Nushagak District commercial salmon catch included 151 pink salmon (Table 35). An estimated 169 pink salmon passed the sonar counter on Nushagak River (Table 50). No pink salmon catches or escapements were sampled.

Togiak District Runs

An estimated 360,626 salmon were caught in Togiak District (Table 56). The catch was comprised of 56% chum, 25% sockeye, 16% coho, 3% chinook, and < 1% pink salmon. Salmon caught in Togiak River Section accounted for 76% (273,033) of the total district catch (Table 57). Salmon caught in Kulukak, Matogak, and Osviak Sections comprised 14%, 8%, and 3% of the district catch, respectively (Appendices A.3-A.5).

Sockeye Salmon

An estimated 152,748 Togiak River sockeye salmon returned to Bristol Bay; 45% were caught and 55% escaped into the river (Table 58). The run was dominated by age-1.3 (62%) and age-1.2 (20%) sockeye salmon. Of the 68,265 sockeye salmon harvested from Togiak River Section, most were age 1.3 (68%) and 1.2 (18%; Table 59). The proportion of age-1.2 in the catch increased through time, while the age-1.3 proportion decreased (NSC). Mean length of sockeye salmon in Togiak River Section catch was 565 mm; mean weight was 3.1 kg. Escapement into Togiak Lake was estimated to be 84,480 sockeye salmon (Table 60). Over 85% of the escapement passed the counting tower by 27 July. Most of the sockeye salmon in the escapement were age 1.3 (57%) and age 1.2 (21%; Table 61). Mean length of sockeye salmon in Togiak Lake escapement was 562 mm.

Chinook Salmon

Of the 11,604 chinook salmon caught in Togiak District, most (9,255) were harvested in Togiak River Section (Table 62). Age-1.4 (58%) chinook salmon dominated the Togiak River Section catch, followed in abundance by age-1.3 (32%), age-1.2 (7%), and age-1.5 (4%). Mean length of chinook salmon in the catch was 790 mm; mean weight was 9.4 kg.

Chum Salmon

An estimated 203,054 chum salmon were caught in Togiak District. Most chum salmon (159,166) were caught in Togiak River Section (Table 63). The 0.4- and 0.3-age groups dominated, accounting for 55% and 39% of the chum harvest. Mean length of chum salmon in the catch was 588 mm; mean weight was 3.5 kg.

Coho Salmon

Most coho salmon harvested in the Togiak River sport fishery were age 2.1 (72%) and age 1.1 (21%; Table 64).

Sockeye Salmon Return From Brood Year Escapement

Returns of sockeye salmon from brood year escapements have varied considerably from 1956-81 (years of complete data) for eleven rivers monitored in Bristol Bay (Appendices A.6 - A.17). These data have been used to determine spawner-recruit relationships, establish spawning escapement goals, and forecast future run sizes (Fried 1984; Fried and Yuen 1985, 1986, 1987; Fried et al. 1988; Fried and Cross 1988; Fried and Cross 1990).

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Table 1. Commercial salmon catch by district, Bristol Bay, 1989.

District		Harvest (in numbers of salmon)						Total
		Sockeye	Chinook	Chum	Pink	Coho		
Naknek-Kvichak	Numbers	13,878,778	6,463	308,970	100	22,551	14,216,862	
	Percent	97.6	0.0	2.2	0.0 ^a	0.2		100.0
Egegik	Numbers	8,700,824	1,776	129,365	8	49,106	8,881,079	
	Percent	98.0	0.0 ^a	1.5	0.0 ^a	0.5		100.0
Ugashik	Numbers	3,185,062	2,140	84,468	32	32,354	3,304,056	
	Percent	96.5	0.1	2.6	0.0 ^a	1.0		100.0
Nushagak	Numbers	2,856,988	17,887	446,155	151	77,073	3,398,254	
	Percent	84.1	0.5	13.1	0.0 ^a	2.3		100.0
Togiak	Numbers	88,451	11,604	203,054	217	57,300	360,626	
	Percent	24.5	3.2	56.3	0.1	15.9		100.0
Total	Numbers	28,710,103	39,870	1,172,012	508	238,384	30,160,877	
	Percent	95.2	0.1	3.9	0.0 ^a	0.8		100.0

^a Represented < 0.1% of total

Table 2. ADF&G emergency orders issued for Bristol Bay in 1989.

Number ^a	Date and Time			Action	Duration	
NAKNEK-KVICHAK DISTRICT						
AKN 05	June 26	4:30 a.m.	to June 27	4:30 p.m.	Opened	12 h
AKN 07	June 29	6:30 a.m.	to June 29	4:30 p.m.	Opened	10 h
AKN 09	June 30	10:30 p.m.	to July 1	8:30 a.m.	Opened	10 h
AKN 11	July 2	9:30 a.m.	to July 2	7:30 p.m.	Opened	10 h
AKN 14	July 3	12:00 MN	to July 4	12:00 N	Opened	12 h
AKN 17	July 4	12:00 N	to July 4	10:00 p.m.	Extended	10 h
AKN 18	July 6	2:00 a.m.	to July 6	2:00 p.m.	Opened	12 h
AKN 21	July 6	2:00 p.m.	to July 7	3:00 p.m.	Extended	25 h
AKN 27	July 8	4:00 p.m.	to July 9	5:00 p.m.	Opened	25 h
AKN 30	July 9	5:00 p.m.	to July 10	5:00 p.m.	Extended	24 h
AKN 31	July 10	5:00 p.m.	to July 11	6:00 p.m.	Extended	25 h
AKN 33	July 11	6:00 p.m.	to July 12	7:00 p.m.	Extended	25 h
AKN 35	July 12	7:00 p.m.	to July 13	7:00 p.m.	Extended	24 h
AKN 37	July 14	9:00 p.m.	to July 17	9:00 a.m.	Opened	60 h
Naknek Section Only						
AKN 13	July 3	10:30 a.m.	to July 3	12:00 MN	Opened	13.5 h
AKN 18	July 5	1:00 p.m.	to July 6	2:00 a.m.	Opened	11 h
Naknek River Personal Use Fishery						
AKN 24	July 6	12:00 N	to July 25	12:00 MN	Opened	19 d 12 h
ESEGEGIK DISTRICT						
AKN 01 ^b	June 16	9:00 a.m.	to June 23	9:00 a.m.	Begin E.O.	7 d
AKN 02	June 19	12:00 MN	to June 20	12:00 N	Opened	12 h
AKN 03	June 23	2:30 a.m.	to June 23	1:30 p.m.	Opened	11 h
AKN 04	June 25	5:00 p.m.	to June 26	3:00 a.m.	Opened	10 h
AKN 06	June 28	6:00 a.m.	to June 28	6:00 p.m.	Opened	12 h
AKN 08	June 30	7:30 a.m.	to June 30	7:30 p.m.	Opened	12 h
AKN 12	July 2	9:30 a.m.	to July 2	7:30 p.m.	Opened	10 h
AKN 15	July 4	11:30 a.m.	to July 4	9:30 p.m.	Opened	10 h
AKN 19	July 6	2:00 a.m.	to July 6	12:00 N	Opened	10 h
AKN 23	July 6	12:00 N	to July 7	1:00 a.m.	Extended	13 h
AKN 25	July 7	3:00 p.m.	to July 8	3:00 p.m.	Opened	24 h
AKN 29	July 9	3:30 a.m.	to July 17	9:00 a.m.	Opened	8 d 5.5 h
AKN 38 ^c	July 14	7:00 a.m.	to July 14	9:00 p.m.	Closed	14 h
AKN 40	July 21	9:00 a.m.	to July 24	9:00 a.m.	Extended	3 d
AKN 41	Sept 8	9:00 a.m.	to Sept 30	12:00 MN	Closed	22 d 15 h
UGASHIK DISTRICT						
AKN 10	July 1	8:00 a.m.	to July 1	8:00 p.m.	Opened	12 h
AKN 16	July 4	11:00 a.m.	to July 5	12:00 N	Opened	25 h
AKN 20	July 5	12:00 N	to July 6	1:00 p.m.	Extended	25 h
AKN 22	July 6	1:00 p.m.	to July 7	2:00 p.m.	Opened	25 h
AKN 26	July 7	2:00 p.m.	to July 8	3:00 p.m.	Extended	25 h
AKN 28	July 8	3:00 p.m.	to July 9	3:00 p.m.	Extended	24 h
AKN 32	July 11	4:00 a.m.	to July 11	5:00 p.m.	Opened	13 h
AKN 34	July 12	5:00 p.m.	to July 13	6:00 p.m.	Opened	25 h
AKN 36 ^d	July 12	6:00 p.m.	to July 17	9:00 a.m.	Opened	4 d 15 h
AKN 39 ^e	July 14	7:00 a.m.	to July 14	7:00 p.m.	Closed	12 h
AKN 40	July 21	9:00 a.m.	to July 24	9:00 a.m.	Extended	3 d

-Continued-

Table 2. (p 2 of 2).

Number ^a	Date and Time			Action	Duration
NUSHAGAK DISTRICT					
DLG 01	May 29	12:01 a.m.	to June 16	9:00 a.m.	Subsistence
DLG 02	June 16	9:00 a.m.	to June 21	9:00 a.m.	Subsistence
DLG 03	June 21	9:00 a.m.	to June 24	9:00 a.m.	Subsistence
DLG 04 ^f	June 26	7:30 p.m.	to June 27	7:30 a.m.	Opened
DLG 05 ^f	June 29	9:00 a.m.	to June 29	9:00 p.m.	Opened
DLG 06 ^f	July 1	11:00 a.m.	to July 1	11:00 p.m.	Opened
DLG 07	July 3	1:00 a.m.	to July 3	1:00 p.m.	Opened
DLG 09	July 3	1:00 p.m.	to July 4	1:00 a.m.	Extended
DLG 10	July 4	1:00 a.m.	to July 4	2:00 p.m.	Extended
DLG 11	July 4	2:00 p.m.	to July 5	3:00 p.m.	Extended
DLG 12	July 5	3:00 p.m.	to July 6	4:00 p.m.	Extended
DLG 13	July 6	4:00 p.m.	to Sept 7	5:00 p.m.	Extended
DLG 14	July 7	5:00 p.m.	to Sept 8	6:00 p.m.	Extended
DLG 15	July 8	6:00 p.m.	to July 17	9:00 a.m.	Extended
DLG 17 ^g	July 26	9:00 a.m.	to Sept 30	12:00 MN	Reduced
DLG 20	Aug. 7	9:00 a.m.	to Aug. 14	9:00 a.m.	Closed
DLG 21	Aug. 21	9:00 a.m.	to Sept 30	12:00 MN	Closed
DLG 22	Aug. 28	12:01 a.m.	to Sept 30	12:00 MN	Subsistence
					34 d
TOGIAK DISTRICT					
DLG 08	July 3	9:00 a.m.	to July 8	9:00 a.m.	Closed
DLG 16	July 17	9:00 a.m.	to July 22	9:00 a.m.	Closed
DLG 18 ^h	July 24	9:00 a.m.	to July 29	9:00 a.m.	Closed
DLG 19 ⁱ	Aug 7	9:00 a.m.	to Sept 30	12:00 MN	Reduced
DLG 23 ^j	Aug 28	9:00 a.m.	to Aug 31	9:00 a.m.	Reduced

- ^a Prefix code on emergency order indicates the office of origin (AKN for King Salmon and DLG for Dillingham).
- ^b Emergency Order period in Egegik District began at 9:00 a.m. 16 June.
- ^c Supercedes AKN 29
- ^d Supercedes AKN 34
- ^e Supercedes AKN 36
- ^f Required use of 6-3/4 in (17.14 cm) mesh or smaller.
- ^g Weekly fishing period reduced to 48 h: 9:00 a.m. Monday through 9:00 a.m. Wednesday.
- ^h Closed Togiak River Section and Kulukak Section to commercial salmon fishing for 5 d.
- ⁱ Weekly fishing period reduced to 72 h: 9:00 a.m. Monday through 9:00 a.m. Thursday.
- ^j Weekly fishing period reduced to 48 h: 9:00 a.m. Tuesday through 9:00 Thursday.

Table 3. Sockeye salmon inshore run by river system, Bristol Bay, 1989.

SYSTEM	CATCH	ESCAPEMENT	RUN
NAKNEK-KVICHAK DISTRICT			
Kvichak River	11,513,603	8,317,500	19,831,103
Branch River	338,597	196,760	535,357
Naknek River	2,026,578	1,161,984	3,188,562
TOTAL	<u>13,878,778</u>	<u>9,676,244</u>	<u>23,555,022</u>
EGEGIK DISTRICT			
Egegik River	8,700,824	1,610,916	10,311,740
Shosky Creek		50	50
King Salmon River		600	600
TOTAL	<u>8,700,824</u>	<u>1,611,566</u>	<u>10,312,390</u>
UGASHIK DISTRICT			
Ugashik River	3,185,062	1,681,302	4,866,364
Dog Salmon River		6,505	6,505
King Salmon River		25,480	25,480
TOTAL	<u>3,185,062</u>	<u>1,713,287</u>	<u>4,898,349</u>
NUSHAGAK DISTRICT			
Wood River	1,365,644	1,186,410	2,552,054
Igushik River	770,885	461,610	1,232,495
Nushagak River	720,459	513,421	1,233,880
Snake River		28,060	28,060
TOTAL	<u>2,856,988</u>	<u>2,189,501</u>	<u>5,046,489</u>
TOGIAK DISTRICT			
Togiak Lake	68,268	84,480	152,748
Togiak River and Tributaries		19,760	19,760
Kulukak River	13,945	20,840	34,785
Matogak Section	5,040		5,040
Osviak Section	1,198		1,198
TOTAL	<u>88,451</u>	<u>125,080</u>	<u>213,531</u>
BRISTOL BAY TOTAL	28,710,103	15,315,678	44,025,781

Table 4. Sockeye salmon inshore run by age group and river system, Bristol Bay, 1989.

River System	Numbers of Fish by Age Group														Total ^a
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	
Naknek/Kvichak District															
Kvichak River	8,994		28,744	998,099	28,484	1,013	1,868,204	16,351,708		4,847	541,000				19,831,103
Branch River		1,476		348,253	260	26	141,525	40,704			3,113				535,357
Naknek River		2,870	5,689	639,777	19,209	141	885,031	1,170,945		4,537	453,426			6,937	3,188,562
Total	8,994	4,346	34,433	1,986,129	47,963	1,180	2,894,760	17,563,357		9,384	997,539			6,937	23,555,022
Egegik River															
Egegik River		1,623	8,353	540,080	30,875		926,938	6,166,421	2,646	6,849	2,606,244	19,086	1,656	969	10,311,740
Ugashik River	4,453	496	6,201	492,009	1,695		549,923	3,503,750		3,216	301,719	883	2,019		4,866,364
Nushagak District															
Wood River	6,420	1,691	14,647	1,108,600		1,624	1,315,420	30,773		1,964	70,915				2,552,054
Igushik River	2,533		7,110	508,314			630,377	54,524		1,798	27,839				1,232,495
Nushagak River	64,583		499,038	62,617		31,841	555,328	1,840		15,566	3,067				1,233,880
Total	73,536	1,691	520,795	1,679,531		33,465	2,501,125	87,137		19,328	101,821				5,018,429
Togiak River	129		6,166	30,022	92	153	94,450	3,327		1,610	16,550			249	152,748
TOTAL	87,112	8,156	575,948	4,727,771	80,625	34,798	6,967,196	27,323,992	2,646	40,387	4,023,873	19,969	10,861	969	43,904,303

^a Some catches and escapements were not sampled for age information and were not included in the table: catches from Kulukak (13,945), Matogak (5,040), and Osviak (1,198) Sections of Togiak District; escapements from Shosky Creek and King Salmon River (650) of Egegik District, King Salmon and Dog Salmon Rivers (31,985) of Ugashik District, Snake River (28,060) of Nushagak District, Togiak River below the counting tower and its tributaries (19,760) and Kulukak River and tributaries (20,840) of Togiak District.

Table 5. Percentages by age group and river system of sockeye salmon runs to Bristol Bay, 1989.

River System	Percentages by Age Group													Total ^a	
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	
Naknek/Kvichak District															
Kvichak River	0.02		0.07	2.27	0.06 ^b	0.00 ^b	4.26	37.24		0.01	1.23				45.17
Branch River		0.00 ^b		0.79	0.00 ^b	0.00 ^b	0.32	0.09		0.01	0.01				1.22
Naknek River		0.01	0.01	1.46	0.04	0.00 ^b	2.02	2.67		0.01	1.03		0.02		7.26
Total	0.02	0.01	0.08	4.52	0.11	0.00 ^b	6.59	40.00		0.02	2.27		0.02		53.65
Egegik River		0.00 ^b	0.02	1.23	0.07		2.11	14.05	0.01	0.02	5.94	0.04	0.00 ^b	0.00 ^b	23.49
Ugashik River	0.01	0.00 ^b	0.01	1.12	0.00 ^b		1.25	7.98		0.01	0.69	0.00 ^b	0.00 ^b		11.08
Nushagak District															
Wood River	0.01	0.00 ^b	0.03	2.53		0.00 ^b	3.00	0.07		0.00 ^b	0.16				5.81
Igushik River	0.01		0.02	1.16			1.44	0.12 ^b		0.00 ^b	0.06				2.81
Nushagak River	0.15		1.14	0.14		0.07	1.26	0.00 ^b		0.04	0.01				2.81
Total	0.17	0.00 ^b	1.19	3.83		0.08	5.70	0.20		0.04	0.04				11.43
Togiak River	0.00 ^b		0.01	0.07	0.00 ^b	0.00 ^b	0.22	0.01		0.00 ^b	0.04		0.00 ^b		0.35
TOTAL	0.20	0.02	1.31	10.77	0.18	0.08	15.87	62.24	0.01	0.09	9.17	0.05	0.02	0.00^b	100.00

^a Some catches and escapements were not sampled for age information and were not included in the table: catches from Kulukak (13,945), Matogak (5,040), and Osviak (1,198) Sections of Togiak District; escapements from Shosky Creek and King Salmon River (650) of Egegik District, King Salmon and Dog Salmon Rivers (31,985) of Ugashik District, Snake River (28,060) of Nushagak District, Togiak River below the counting tower and its tributaries (19,760) and Kulukak River and tributaries (20,840) of Togiak District.

^b Represented < 0.01% of total

Table 6. Age, sex, and size composition of sockeye salmon catch and escapement, Bristol Bay, 1989.

	Age Group															
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total ^a	
Males	52,790	6,456	211,815	2,121,951	69,771	17,119	3,394,551	11,972,529	451	23,875	2,066,596	6,487	4,177	740 ^b	19,949,308	
Percent	0.12	0.01	0.48	4.83	0.16	0.04	7.73	27.27	0.00 ^b	0.05	4.71	0.01	0.01	0.00 ^b	45.44	
Mean Length	441	257	567	494	369	627	584	529	410	613	588	525	622	449	540	
Std. Error	5	7	3	1	4	6	1	0 ^b	7	1	1	1	3	2	0 ^c	
Sample Size	83	15	343	2,857	104	26	4,390	8,877	1	42	2,395	5	3	2	19,143	
Mean Weight	1.92		3.19	2.20		3.47	3.18	2.30		2.77	3.25		2.81		2.55	
Std. Error			0.18	0.03			0.05	0.02			0.06				0.01	
Sample Size	1		48	228		3	495	827		4	293				1,899	
Females	34,322	1,700 ^b	364,133	2,605,820	10,854	17,679	3,572,645	15,351,463	2,195 ^b	16,512	1,957,277	13,482	6,684	229 ^b	23,954,995	
Percent	0.08	0.00 ^b	0.83	5.94	0.02	0.04	8.14	34.97	0.00 ^b	0.04	4.46	0.03	0.02	0.00 ^b	54.56	
Mean Length	471	355	549	485	418	578	560	510	440	555	568	532	583	515	520	
Std. Error	12	6	1	1	39	12	1	0		5	1	14			0 ^c	
Sample Size	39	3	540	3,554	15	23	4,937	10,814	3	41	2,378	13	10	1	22,371	
Mean Weight	1.83		2.82	1.95	1.95	2.96	2.79	2.08		3.07	2.83		2.81		2.24	
Std. Error	0.33		0.06	0.02		1.00	0.03	0.02		0.20	0.03				0.01	
Sample Size	9		74	226	1	4	603	910		7	256		1		2,091	
Both Sexes	87,112	8,156	575,948	4,727,771	80,625	34,798	6,967,196	27,323,992	2,646	40,387	4,023,873	19,969	10,861	969 ^b	43,904,303	
Percent	0.20	0.02	1.31	10.77	0.18	0.08	15.87	62.24	0.01	0.09	9.17	0.05	0.02	0.00 ^b	100.00	
Mean Length	453	278	556	489	375	602	572	518	435	589	578	530	598	465	529	
Std. Error	5	5	1	0 ^c	4	6	0 ^c	0		4	1	10			0 ^c	
Sample Size	122	18	883	6,411	119	49	9,327	19,691	4	83	4,773	18	13	3	41,514	
Mean Weight	1.88		2.95	2.07	1.95	3.15	2.98	2.18		2.92	3.05		2.81		2.38	
Std. Error	0.33		0.07	0.02		1.00	0.03	0.01		0.20	0.04				0.01	
Sample Size	10		122	454	1	7	1,098	1,737		11	549		1		3,990	

-Continued-

Table 6. (p 2 of 2).

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- ^a Some catches and escapements were not sampled for age information and were not included in the table: catches from Kulukak (13,945), Matogak (5,040), and Osviak (1,198) Sections of Togiak District; escapements from Shosky Creek and King Salmon River (650) of Egegik District, King Salmon and Dog Salmon Rivers (31,985) of Ugashik District, Snake River (28,060) of Nushagak District, Togiak River below the counting tower and its tributaries (19,760) and Kulukak River and tributaries (20,840) of Togiak District.
 - ^b Represented < 0.01% of total
 - ^c Standard Error < 0.5

Table 7. Commercial salmon catch by period and species,
Naknek-Kvichak District, 1989.

Period	Hours ^b	Opening		Effort ^a		Catch (number of fish)				
		Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total	
6/06-6/10	81			8	12	0	0	0	20	
6/12-6/17	135	64	46	7,769	362	1,347	0	0	9,472	
6/19	15	313	99	30,735	265	981	0	0	31,981	
6/20	24	450	128	125,134	474	2,119	0	0	127,727	
6/21	24	542	174	211,607	274	3,499	0	0	215,380	
6/22	24	639	202	289,425	236	3,643	0	0	293,304	
6/23	9			293,228	136	4,186	0	0	297,550	
6/26	12	944	262	641,821	58	12,221	0	0	654,100	
6/29	10	980	307	1,462,338	301	15,339	0	0	1,477,978	
6/30-7/01	10	955		736,286	106	6,198	0	0	741,590	
7/02	10		313	1,905,054	145	11,538	1	0	1,916,738	
7/03	13.5			601,082	47	4,163	0	0	605,292	
7/04	22	960	329	1,148,920	195	10,444	0	0	1,159,559	
7/05	11			418,980	35	4,543	0	0	423,558	
7/06	24		326	1,470,476	210	18,869	0	0	1,489,555	
7/07	15	862	305	666,357	121	11,311	0	0	677,789	
7/08	8			82,151	10	2,202	0	0	84,363	
7/09	24	766		339,979	97	8,911	3	0	348,990	
7/10	24		305	644,911	153	9,013	0	0	654,077	
7/11	24	731		582,660	131	12,514	1	0	595,306	
7/12	24		311	846,819	251	18,128	0	0	865,198	
7/13	19	742	282	437,190	141	13,490	0	0	450,821	
7/14	3			36,930	2	774	0	0	37,706	
7/15	24	741	277	317,135	123	16,110	0	0	333,368	
7/16	24	428	260	110,827	123	10,158	3	0	121,111	
7/17	24	373	257	177,545	209	15,214	2	0	192,966	
7/18	24	318	233	135,375	233	20,430	1	4	156,043	
7/19	24	257	224	47,915	100	8,301	4	11	56,331	
7/20	24	152	205	31,174	181	8,208	1	23	39,587	
7/21	24	92	176	18,405	102	6,136	8	70	24,718	
7/22	9			7,452	38	1,330	1	39	8,860	
7/24	15			13,363	100	11,237	7	501	25,208	
7/25	24			10,847	206	6,617	17	701	18,388	
7/26	24			6,156	262	4,478	16	729	11,641	
7/27	24			3,313	459	6,925	3	1,428	12,128	
7/28	24			3,526	182	5,348	3	2,070	11,129	
7/29	9			1,605	29	621	2	282	2,539	
7/31-8/05	120			11,487	277	11,798	30	7,715	31,307	
8/07-8/12	120			2,099	48	1,373	0	5,532	9,052	
8/14-8/19	120			482	27	199	0	2,291	2,999	
8/21-8/25	111			218	6	54	0	1,155	1,433	
Total	1,333.5 h			13,878,778	6,463	308,970	100	22,551	14,216,862	
Percent of District Catch				97.6	0.0 ^c	2.2	0.0 ^c	0.2	100.0	

^a Fishing effort represents number of drift boats and set nets estimated from aerial surveys on open fishing periods. Blanks indicate no aerial surveys were conducted.

^b See Table 2 for emergency order fishing periods.

^c Represented < 0.1% of total

Table 8. Age and sex composition of sockeye salmon inshore run, Naknek-Kvichak District, 1989.

	Age Group												
Females	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total	
<u>CATCH</u>													
Males	2,744		12,334	528,130	675		1,143,811	4,180,993	4,097	411,486	3,568	6,287,838	
Percent	0.01		0.05	2.24	0.00 ^a		4.86	17.75	0.02	1.75	0.02	26.69	
Females	3,779		16,723	675,821		1,180	954,087	5,603,773	874	332,984	1,719	7,590,940	
Percent	0.02		0.07	2.87		0.01	4.05	23.79	0.00 ^a	1.41	0.01	32.23	
Both Sexes	6,523		29,057	1,203,951	675	1,180	2,097,898	9,784,766	4,971	744,470	5,287	13,878,778	
Percent	0.03		0.12	5.11	0.00 ^a	0.01	8.91	41.54	0.02	3.16	0.02	58.92	
<u>ESCAPEMENT</u>													
Males	2,471	4,346	1,934	379,589	43,455		401,730	3,071,273	3,285	122,353	564	4,031,000	
Percent	0.01	0.02	0.01	1.61	0.18		1.71	13.04	0.01	0.52	0.00 ^a	17.11	
Females				3,442	402,589	3,833		395,132	4,707,318	1,128	130,716	1,086	5,645,244
Percent				0.01	1.71	0.02		1.68	19.98	0.00 ^a	0.55	0.00 ^a	23.97
Both Sexes	2,471	4,346	5,376	782,178	47,288		796,862	7,778,591	4,413	253,069	1,650	9,676,244	
Percent	0.01	0.02	0.02	3.32	0.20		3.38	33.02	0.02	1.07	0.01	41.08	
<u>CATCH AND ESCAPEMENT</u>													
Males	5,215	4,346	14,268	907,719	44,130		1,545,541	7,252,266	7,382	533,839	4,132	10,318,838	
Percent	0.02	0.02	0.06	3.85	0.19		6.56	30.79	0.03	2.27	0.02	43.81	
Females	3,779		20,165	1,078,410	3,833	1,180	1,349,219	10,311,091	2,002	463,700	2,805	13,236,184	
Percent	0.02		0.09	4.58	0.02	0.01	5.73	43.77	0.01	1.97	0.01	56.19	
Both Sexes	8,994	4,346	34,433	1,986,129	47,963	1,180	2,894,760	17,563,357	9,384	997,539	6,937	23,555,022	
Percent	0.04	0.02	0.15	8.43	0.20	0.01	12.29	74.56	0.04	4.23	0.03	100.00	

^a Represented < 0.01% of total

Table 9. Age, sex, and size composition of sockeye salmon commercial catch, Naknek-Kvichak District, 1989.

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 1: 5 - 17 June											
Males		217				924	2,011		489		3,641
Percent		2.79				11.89	25.88		6.29		46.85
Mean Length		549				616	539		609		569
Std. Error		16				8	4		7		3
Sample Size		4				17	37		9		67
Females		217				978	2,500		435		4,130
Percent		2.79				12.59	32.17		5.60		53.15
Mean Length		523				591	522		581		545
Std. Error		17				5	3		4		3
Sample Size		4				18	46		8		76
Both Sexes		434				1,902	4,511		924		7,771
Percent		5.58				24.48	58.05		11.89		100.00
Mean Length		536				603	530		596		556
Std. Error		12				4	3		4		2
Sample Size		8				35	83		17		143
Sample Period 2: 19 - 20 June											
Males		6,073	675			14,845	53,305		14,845		89,743
Percent		3.90	0.43			9.52	34.20		9.52		57.58
Mean Length		534	536			604	541		597		560
Std. Error		8				5	3		7		2
Sample Size		9	1			22	79		22		133
Females		3,374				12,820	44,534		5,398		66,126
Percent		2.16				8.22	28.57		3.46		42.42
Mean Length		546				580	531		585		546
Std. Error		14				6	3		7		2
Sample Size		5				19	66		8		98
Both Sexes		9,447	675			27,665	97,839		20,243		155,869
Percent		6.06	0.43			17.75	62.77		12.99		100.00
Mean Length		538	536			593	537		594		554
Std. Error		7				4	2		5		2
Sample Size		14	1			41	145		30		231

-Continued-

Table 9. (p 2 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 3: 21 - 23 June											
Males	1,719	22,349			49,856	159,884		46,418			280,226
Percent	0.22	2.81			6.28	20.13		5.84			35.28
Mean Length	550	521			601	537		588			556
Std. Error		5			5	2		6			2
Sample Size	1	13			29	93		27			163
Mean Weight	3.05	2.53			3.47	2.68		4.03			3.03
Std. Error		0.12			0.31	0.11		0.52			0.12
Sample Size	1	3			3	10		5			22
Females		22,349			101,431	309,453		79,082	1,719		514,034
Percent		2.81			12.77	38.96		9.96	0.22		64.72
Mean Length		512			577	526		580	617		544
Std. Error		9			4	2		4			1
Sample Size		13			59	180		46	1		299
Mean Weight					2.62	2.32		3.04			2.50
Std. Error					0.23	0.10		0.15			0.08
Sample Size					3	10		8			21
Both Sexes	1,719	44,698			151,287	469,337		125,500	1,719		794,260
Percent	0.22	5.63			19.05	59.09		15.80	0.22		100.00
Mean Length	550	516			585	530		583	617		548
Std. Error		5			3	1		3			1
Sample Size	1	26			88	273		73	1		462
Mean Weight	3.05	2.53			2.90	2.44		3.41			2.69
Std. Error		0.12			0.18	0.08		0.21			0.07
Sample Size	1	3			6	20		13			43

-Continued-

Table 9. (p 3 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 4: 26 June											
Males	1,180	28,316			115,622	189,951		30,675			365,744
Percent	0.18	4.41			18.01	29.60		4.78			56.99
Mean Length	508	523			586	534		592			554
Std. Error		5			3	2		5			1
Sample Size	1	24			98	161		26			310
Mean Weight	2.50	3.32			3.42	2.47		3.42			2.92
Std. Error		0.41			0.14	0.07		0.25			0.07
Sample Size	1	3			10	26		7			47
Females		25,956		1,180	69,609	156,915		22,417			276,077
Percent		4.04		0.18	10.85	24.45		3.49			43.01
Mean Length		507		627	570	519		580			536
Std. Error		5			2	2		6			1
Sample Size		22		1	59	133		19			234
Mean Weight		2.07			2.83	2.17		2.68			2.37
Std. Error		0.23			0.08	0.05		0.26			0.05
Sample Size		4			12	20		5			41
Both Sexes	1,180	54,272		1,180	185,231	346,866		53,092			641,821
Percent	0.18	8.46		0.18	28.86	54.04		8.27			100.00
Mean Length	508	515		627	580	527		587			546
Std. Error		3			2	1		4			1
Sample Size	1	46		1	157	294		45			544
Mean Weight	2.50	2.72			3.20	2.33		3.11			2.68
Std. Error		0.24			0.09	0.04		0.18			0.04
Sample Size	1	7			22	46		12			88

-Continued-

Table 9. (p 4 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 5: 29 June											
Males	37,422				207,261	371,341		48,937			664,961
Percent	2.56				14.17	25.39		3.35			45.47
Mean Length	510				584	533		586			551
Std. Error	7				3	2		9			2
Sample Size	13				72	129		17			231
Mean Weight	2.21				3.19	2.52		3.04			2.75
Std. Error	0.12				0.11	0.08		0.38			0.06
Sample Size	7				21	30		5			63
Females	40,301				126,659	590,116		40,301			797,377
Percent	2.76				8.66	40.35		2.76			54.53
Mean Length	493				568	515		578			525
Std. Error	9				4	2		6			2
Sample Size	14				44	205		14			277
Mean Weight	2.00				2.99	2.20		2.73			2.34
Std. Error	0.19				0.12	0.06		0.15			0.05
Sample Size	3				11	52		6			72
Both Sexes	77,723				333,920	961,457		89,238			1,462,338
Percent	5.31				22.83	65.75		6.10			100.00
Mean Length	501				578	522		582			537
Std. Error	6				2	1		5			1
Sample Size	27				116	334		31			508
Mean Weight	2.10				3.11	2.32		2.90			2.53
Std. Error	0.12				0.08	0.05		0.22			0.04
Sample Size	10				32	82		11			135

-Continued-

Table 9. (p 5 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 6: 30 June - 1 July											
Males	41,957				97,450	301,824	1,353	14,888			457,472
Percent	5.70				13.24	40.99	0.18	2.02			62.13
Mean Length	499				582	526	597	592			538
Std. Error	6				3	2		7			1
Sample Size	31				72	223	1	11			338
Mean Weight	2.25				3.52	2.59		3.77			2.80
Std. Error	0.13				0.14	0.08		0.25			0.06
Sample Size	6				17	31		4			58
Females	24,362				37,897	205,727		10,828			278,814
Percent	3.31				5.15	27.94		1.47			37.87
Mean Length	501				558	511		586			520
Std. Error	5				4	2		4			2
Sample Size	18				28	152		8			206
Mean Weight	2.30				2.87	2.15		3.11			2.30
Std. Error	0.24				0.12	0.07					0.06
Sample Size	3				8	21		1			33
Both Sexes	66,319				135,347	507,551	1,353	25,716			736,286
Percent	9.01				18.38	68.93	0.18	3.49			100.00
Mean Length	500				575	520	597	589			531
Std. Error	4				3	1		4			1
Sample Size	49				100	375	1	19			544
Mean Weight	2.27				3.34	2.41		3.49			2.61
Std. Error	0.12				0.11	0.05		0.25			0.04
Sample Size	9				25	52		5			91

-Continued-

Table 9. (p 6 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 7: 2 July											
Males		42,810			214,051	881,177		92,755	3,568	1,234,361	
Percent		2.25			11.24	46.25		4.87	0.19	64.79	
Mean Length		487			581	525		578	618	538	
Std. Error		11			4	1		5		1	
Sample Size		12			60	247		26	1	346	
Mean Weight		2.25			3.21	2.42		3.48		2.63	
Std. Error		0.21			0.13	0.07		0.20		0.05	
Sample Size		2			15	28		6		51	
Females		3,568	21,405		78,485	542,262		24,973		670,693	
Percent		0.19	1.12		4.12	28.46		1.31		35.21	
Mean Length		540	504		568	507		573		517	
Std. Error		11			5	2		4		2	
Sample Size		1	6		22	152		7		188	
Mean Weight			2.33		3.01	2.16		3.11		2.30	
Std. Error			0.19		0.19	0.05				0.05	
Sample Size			1		6	32		1		40	
Both Sexes		3,568	64,215		292,536	1,423,439		117,728	3,568	1,905,054	
Percent		0.19	3.37		15.36	74.72		6.18	0.19	100.00	
Mean Length		540	493		578	518		577	618	530	
Std. Error		8			3	1		4		1	
Sample Size		1	18		82	399		33	1	534	
Mean Weight			2.28		3.16	2.32		3.40		2.52	
Std. Error			0.21		0.11	0.05		0.20		0.04	
Sample Size			3		21	60		7		91	

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Table 9. (p 7 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 8: 3 July											
Males	750	24,764			48,777	240,133		23,263		337,687	
Percent	0.12	4.12			8.11	39.95		3.87		56.18	
Mean Length	627	501			581	527		575		536	
Std. Error		6			3	2		5		1	
Sample Size	1	33			65	320		31		450	
Mean Weight	4.51	1.72			3.06	2.30		2.98		2.42	
Std. Error		0.22			0.13	0.06		0.29		0.05	
Sample Size	1	6			10	48		6		71	
Females	750	21,012			31,517	200,361		9,755		263,395	
Percent	0.12	3.50			5.24	33.33		1.62		43.82	
Mean Length	566	509			562	514		553		521	
Std. Error		3			4	1		8		1	
Sample Size	1	28			42	267		13		351	
Mean Weight		1.90			2.54	1.96		2.71		2.05	
Std. Error		0.17			0.13	0.06		0.06		0.05	
Sample Size		4			11	37		2		54	
Both Sexes	1,500	45,776			80,294	440,494		33,018		601,082	
Percent	0.25	7.62			13.36	73.28		5.49		100.00	
Mean Length	597	505			574	521		568		529	
Std. Error		4			2	1		4		1	
Sample Size	2	61			107	587		44		801	
Mean Weight	4.51	1.80			2.86	2.15		2.90		2.26	
Std. Error		0.14			0.10	0.04		0.21		0.04	
Sample Size	1	10			21	85		8		125	

-Continued-

Table 9. (p 8 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 9: 4 July											
Males	4,453	40,079			66,798	204,846		26,719			342,895
Percent	0.39	3.49			5.81	17.83		2.33			29.84
Mean Length	597	508			595	538		585			550
Std. Error		12			7	3		20			3
Sample Size	1	9			15	46		6			77
Mean Weight		2.62			4.64	2.66		3.45			3.11
Std. Error						0.08					0.05
Sample Size		1			1	7		1			10
Females		106,876			124,689	547,741		26,719			806,025
Percent		9.30			10.85	47.67		2.33			70.16
Mean Length		505			569	517		564			525
Std. Error		6			3	2		7			2
Sample Size		24			28	123		6			181
Mean Weight		1.92			2.79	2.21		2.80			2.28
Std. Error		0.05			0.13	0.08		0.13			0.06
Sample Size		5			4	19		3			31
Both Sexes	4,453	146,955			191,487	752,587		53,438			1,148,920
Percent	0.39	12.79			16.67	65.50		4.65			100.00
Mean Length	597	506			578	523		574			533
Std. Error		5			3	2		10			2
Sample Size	1	33			43	169		12			258
Mean Weight		2.11			3.44	2.33		3.13			2.53
Std. Error		0.05			0.13	0.07		0.13			0.05
Sample Size		6			5	26		4			41

-Continued-

Table 9. (p 9 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 10: 5 - 6 July											
Males			60,463			52,905	453,468		18,895		585,731
Percent			3.20			2.80	24.00		1.00		31.00
Mean Length			512			578	532		585		536
Std. Error			6			10	2		8		2
Sample Size			16			14	120		5		155
Mean Weight			2.39			2.51	2.42		2.44		2.43
Std. Error			0.09				0.11				0.09
Sample Size			2			1	21		1		25
Females	3,779	3,779	68,020			151,156	1,024,086		52,905		1,303,725
Percent	0.20	0.20	3.60			8.00	54.20		2.80		69.00
Mean Length	506	531	514			570	516		573		525
Std. Error			7			4	2		6		1
Sample Size	1	1	18			40	271		14		345
Mean Weight			1.71			2.63	1.99		2.93		2.09
Std. Error			0.11			0.12	0.05		0.28		0.04
Sample Size			2			9	44		2		57
Both Sexes	3,779	3,779	128,483			204,061	1,477,554		71,800		1,889,456
Percent	0.20	0.20	6.80			10.80	78.20		3.80		100.00
Mean Length	506	531	513			572	521		576		528
Std. Error			4			4	1		5		1
Sample Size	1	1	34			54	391		19		500
Mean Weight			2.03			2.60	2.12		2.80		2.19
Std. Error			0.07			0.12	0.05		0.28		0.04
Sample Size			4			10	65		3		82

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Table 9. (p 10 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 11: 7 - 9 July											
Males	2,164	58,428			67,084	337,582		23,804			489,062
Percent	0.20	5.37			6.16	31.01		2.19			44.93
Mean Length	515	508			584	529		578			536
Std. Error		5			6	2		9			2
Sample Size	1	27			31	156		11			226
Mean Weight		2.06			3.01	2.35		3.31			2.45
Std. Error		0.11			0.70	0.09		0.21			0.12
Sample Size		5			2	26		2			35
Females	2,164	95,216			32,460	456,601		12,984			599,425
Percent	0.20	8.75			2.98	41.95		1.19			55.07
Mean Length	557	495			548	508		563			509
Std. Error		4			7	2		8			1
Sample Size	1	44			15	211		6			277
Mean Weight		1.93				1.92		2.87			1.94
Std. Error		0.16				0.05		0.40			0.05
Sample Size		6				41		2			49
Both Sexes	4,328	153,644			99,544	794,183		36,788			1,088,487
Percent	0.40	14.12			9.15	72.96		3.38			100.00
Mean Length	536	500			572	517		572			521
Std. Error		3			5	1		7			1
Sample Size	2	71			46	367		17			503
Mean Weight		1.98			3.01	2.10		3.15			2.18
Std. Error		0.11			0.70	0.05		0.19			0.06
Sample Size		11			2	67		4			84

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Table 9. (p 11 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 12: 10 July											
Males	1,194	29,857			37,023	161,227		10,749			240,050
Percent	0.19	4.63			5.74	25.00		1.67			37.22
Mean Length	594	524			585	526		593			538
Std. Error		6			5	2		8			2
Sample Size	1	25			31	135		9			201
Mean Weight		2.65			3.47	2.29		3.32			2.56
Std. Error					0.29	0.07					0.07
Sample Size		1			3	21		1			26
Females	2,389	54,937			38,217	305,735		3,583			404,861
Percent	0.37	8.52			5.93	47.41		0.56			62.78
Mean Length	573	510			570	512		561			518
Std. Error	8	3			5	2		10			1
Sample Size	2	46			32	256		3			339
Mean Weight		2.10			3.03	2.06		2.76			2.16
Std. Error		0.08			0.07	0.04					0.04
Sample Size		5			10	43		1			59
Both Sexes	3,583	84,794			75,240	466,962		14,332			644,911
Percent	0.56	13.15			11.67	72.41		2.22			100.00
Mean Length	580	515			577	517		585			525
Std. Error	8	3			4	1		6			1
Sample Size	3	71			63	391		12			540
Mean Weight		2.29			3.25	2.14		3.18			2.31
Std. Error		0.08			0.15	0.04					0.03
Sample Size		6			13	64		2			85

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Table 9. (p 12 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 13: 11 - 12 July											
Males	2,744		65,849			82,312	414,301	2,744	21,950		589,900
Percent	0.19		4.61			5.76	28.98	0.19	1.54		41.27
Mean Length	578		513			587	526	627	564		535
Std. Error			6			5	2		9		2
Sample Size	1		24			30	151	1	8		215
Mean Weight	3.03		2.05			3.00	2.36		2.95		2.44
Std. Error			0.28			0.08	0.09		0.64		0.07
Sample Size	1		2			8	25		2		38
Females			90,543			71,337	653,006		24,693		839,579
Percent			6.33			4.99	45.68		1.73		58.73
Mean Length			506			563	511		568		517
Std. Error			5			4	2		11		1
Sample Size			33			26	238		9		306
Mean Weight			1.92			2.72	1.98				2.04
Std. Error			0.08			0.14	0.04				0.04
Sample Size			8			8	37				53
Both Sexes	2,744		156,392			153,649	1,067,307	2,744	46,643		1,429,479
Percent	0.19		10.94			10.75	74.66	0.19	3.26		100.00
Mean Length	578		509			576	517	627	566		524
Std. Error			4			3	1		7		1
Sample Size	1		57			56	389	1	17		521
Mean Weight	3.03		1.97			2.87	2.13		2.95		2.21
Std. Error			0.13			0.08	0.04		0.64		0.04
Sample Size	1		10			16	62		2		91

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Table 9. (p 13 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 14: 13 - 16 July											
Males		41,585			49,583	281,500		23,992			396,660
Percent		4.61			5.50	31.21		2.66			43.97
Mean Length		497			582	524		590			533
Std. Error		8			5	2		8			2
Sample Size		26			31	176		15			248
Mean Weight		1.63			3.16	2.31		3.20			2.40
Std. Error		0.23			0.29	0.11		0.49			0.10
Sample Size		6			7	23		4			40
Females	3,199	67,176			38,386	383,866		12,795			505,422
Percent	0.35	7.45			4.26	42.55		1.42			56.03
Mean Length	563	496			566	508		561			513
Std. Error	35	3			6	1		8			1
Sample Size	2	42			24	240		8			316
Mean Weight		1.88			2.76	2.03		2.71			2.08
Std. Error		0.09			0.93	0.07					0.09
Sample Size		9			2	41		1			53
Both Sexes	3,199	108,761			87,969	665,366		36,787			902,082
Percent	0.35	12.06			9.75	73.76		4.08			100.00
Mean Length	563	496			575	515		580			521
Std. Error	35	3			4	1		6			1
Sample Size	2	68			55	416		23			564
Mean Weight		1.78			2.99	2.15		3.03			2.22
Std. Error		0.10			0.44	0.06		0.49			0.07
Sample Size		15			9	64		5			93

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Table 9. (p 14 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 15: 17 July - 25 August											
Males	874	27,961			39,320	128,443		13,107			209,705
Percent	0.19	5.94			8.35	27.27		2.78			44.53
Mean Length	595	515			585	527		579			540
Std. Error		5			5	2		9			2
Sample Size	1	32			45	147		15			240
Mean Weight		2.95			3.15	2.41		2.26			2.61
Std. Error		0.17			0.21	0.09		0.65			0.08
Sample Size		4			10	22		2			38
Females	874	34,077			38,446	180,870		874	6,116		261,257
Percent	0.19	7.24			8.16	38.40		0.19	1.30		55.47
Mean Length	583	505			564	510		577	572		519
Std. Error		5			4	2		9			1
Sample Size	1	39			44	207		1	7		299
Mean Weight		2.07			2.77	2.08		2.79			2.20
Std. Error		0.13			0.15	0.08		0.55			0.06
Sample Size		5			8	34		3			50
Both Sexes	1,748	62,038			77,766	309,313		874	19,223		470,962
Percent	0.37	13.17			16.51	65.68		0.19	4.08		100.00
Mean Length	589	509			574	517		577	577		528
Std. Error		3			3	1		7			1
Sample Size	2	71			89	354		1	22		539
Mean Weight		2.47			2.96	2.22		2.43			2.38
Std. Error		0.10			0.13	0.06		0.48			0.05
Sample Size		9			18	56		5			88

-Continued-

Table 9. (p 15 of 15).

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
All Periods Combined											
Males	2,744	12,334	528,130	675		1,143,811	4,180,993	4,097	411,486	3,568	6,287,838
Percent	0.02	0.09	3.81	0.00		8.24	30.13	0.03	2.96	0.03	45.31
Mean Length	578	569	508	536		585	529	617	583	618	541
Std. Error			2			1	1		2		1
Sample Size	1	7	298	1		632	2,220	2	238	1	3,400
Mean Weight	3.03	3.17	2.30			3.29	2.43		3.31		2.64
Std. Error			0.06			0.07	0.03		0.13		0.02
Sample Size	1	3	48			108	318		46		524
Females	3,779	16,723	675,821		1,180	954,087	5,603,773	874	332,984	1,719	7,590,940
Percent	0.03	0.12	4.87		0.01	6.87	40.38	0.01	2.40	0.01	54.69
Mean Length	506	553	504		627	568	513	577	574	617	522
Std. Error		20	2			1	1		2		0
Sample Size	1	9	356		1	500	2,747	1	176	1	3,792
Mean Weight			1.96			2.79	2.08		2.90		2.19
Std. Error			0.04			0.06	0.02		0.09		0.02
Sample Size			55			92	431		35		613
Both Sexes	6,523	29,057	1,203,951	675	1,180	2,097,898	9,784,766	4,971	744,470	5,287	13,878,778
Percent	0.05	0.21	8.67	0.00	0.01	15.12	70.50	0.04	5.36	0.04	100.00
Mean Length	536	560	506	536	627	577	520	610	579	618	531
Std. Error		20	1			1	0		2		0
Sample Size	2	16	654	1	1	1,132	4,967	3	414	2	7,192
Mean Weight	3.03	3.17	2.11			3.07	2.23		3.13		2.39
Std. Error			0.03			0.05	0.02		0.08		0.01
Sample Size	1	3	103			200	749		81		1,137

Table 10. Age and sex composition of sockeye salmon estimated catch and escapement, Kvichak River, 1989.

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	Total	
<u>CATCH</u>											
Males	2,744	12,334	212,290	406		823,320	3,816,786	2,690	261,777	5,132,347	
Percent	0.01	0.06	1.07	0.00 ^a		4.15	19.25	0.01	1.32	25.88	
Females	3,779	12,005	396,833		1,013	534,398	5,288,613	144,615	6,381,256		
Percent	0.02	0.06	2.00		0.01	2.69	26.67	0.73	32.18		
Both Sexes	6,523	24,339	609,123	406	1,013	1,357,718	9,105,399	2,690	406,392	11,513,603	
Percent	0.03	0.12	3.07	0.00 ^a	0.01	6.85	45.91	0.01	2.05	58.06	
<u>ESCAPEMENT</u>											
Males	2,471	1,934	152,582	26,154		289,167	2,803,734	2,157	77,838	3,356,037	
Percent	0.01	0.01	0.77	0.13		1.46	14.14	0.01	0.39	16.92	
Females		2,471	236,394	1,934		221,319	4,442,575		56,770	4,961,463	
Percent		0.01	1.19	0.01		1.12	22.40		0.29	25.02	
Both Sexes	2,471	4,405	388,976	28,088		510,486	7,246,309	2,157	134,608	8,317,500	
Percent	0.01	0.02	1.96	0.14		2.57	36.54	0.01	0.68	41.94	
<u>CATCH AND ESCAPEMENT</u>											
Males	5,215	14,268	364,872	26,560		1,112,487	6,620,520	4,847	339,615	8,488,384	
Percent	0.03	0.07	1.84	0.13		5.61	33.38	0.02	1.71	42.80	
Females	3,779	14,476	633,227	1,934	1,013	755,717	9,731,188		201,385	11,342,719	
Percent	0.02	0.07	3.19	0.01	0.01	3.81	49.07		1.02	57.20	
Both Sexes	8,994	28,744	998,099	28,494	1,013	1,868,204	16,351,708	4,847	541,000	19,831,103	
Percent	0.05	0.14	5.03	0.14	0.01	9.42	82.45	0.02	2.73	100.00	

^a Represented < 0.01% of total

Table 11. Daily sockeye salmon escapement counts, Kvichak River, 1989.

Date	Daily Count	Cumulative Count	Daily Percent of Total	Cumulative Percent
June 25	57,516	57,516	0.69	0.69
26	240,756	298,272	2.89	3.59
27	226,830	525,102	2.73	6.31
28	128,028	653,130	1.54	7.85
29	239,034	892,164	2.87	10.73
30	616,362	1,508,526	7.41	18.14
July 1	543,372	2,051,898	6.53	24.67
2	514,170	2,566,068	6.18	30.85
3	721,308	3,287,376	8.67	39.52
4	1,090,380	4,377,756	13.11	52.63
5	1,040,100	5,417,856	12.50	65.14
6	529,164	5,947,020	6.36	71.50
7	663,636	6,610,656	7.98	79.48
8	571,368	7,182,024	6.87	86.35
9	336,084	7,518,108	4.04	90.39
10	151,398	7,669,506	1.82	92.21
11	38,898	7,708,404	0.47	92.68
12	46,986	7,755,390	0.56	93.24
13	50,640	7,806,030	0.61	93.85
14	53,886	7,859,916	0.65	94.50
15	54,270	7,914,186	0.65	95.15
16	146,046	8,060,232	1.76	96.91
17	70,032	8,130,264	0.84	97.75
18	33,654	8,163,918	0.40	98.15
19	40,914	8,204,832	0.49	98.65
20	40,608	8,245,440	0.49	99.13
21	27,522	8,272,962	0.33	99.46
22	14,370	8,287,332	0.17	99.64
23	7,692	8,295,024	0.09	99.73
24	7,068	8,302,092	0.08	99.81
25	10,332	8,312,424	0.12	99.94
26	5,076	8,317,500	0.06	100.00

Table 12. Age, sex, and size composition of sockeye salmon escapement, Kvichak River, 1989.

	Age Group								
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	Total
Sample Period 1: 25 - 28 June									
Males		11,218		34,900	194,444		12,464		253,026
Percent		1.72		5.34	29.77		1.91		38.74
Mean Length		531		608	545		616		556
Std. Error		17		5	3		7		3
Sample Size		9		28	156		10		203
Females		22,436		44,872	304,128		28,668		400,104
Percent		3.44		6.87	46.56		4.39		61.26
Mean Length		521		600	528		608		541
Std. Error		10		4	2		5		2
Sample Size		18		36	244		23		321
Both Sexes		33,654		79,772	498,572		41,132		653,130
Percent		5.15		12.21	76.34		6.30		100.00
Mean Length		524		603	535		610		547
Std. Error		9		3	2		4		2
Sample Size		27		64	400		33		524
Sample Period 2: 29 June - 1 July									
Males	2,471		29,656		49,426	548,634		9,885	640,072
Percent	0.18		2.12		3.53	39.22		0.71	45.76
Mean Length	430		538		603	525		610	532
Std. Error		11		8	2		19		2
Sample Size	1		12		20	222		4	259
Females	2,471	32,127		32,127	674,672		17,299		758,696
Percent	0.18	2.30		2.30	48.23		1.24		54.24
Mean Length	565	508		583	509		580		514
Std. Error		9		5	2		6		1
Sample Size	1	13		13	273		7		307
Both Sexes	2,471	2,471	61,783		81,553	1,223,306		27,184	1,398,768
Percent	0.18	0.18	4.42		5.83	87.46		1.94	100.00
Mean Length	430	565	522		595	516		591	522
Std. Error			7		5	1		8	1
Sample Size	1	1	25		33	495		11	566

-Continued-

Table 12. (p 2 of 4).

	Age Group								
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	Total
Sample Period 3: 2 - 4 July									
Males		38,908		86,463	873,278		30,262	1,028,911	
Percent		1.67		3.72	37.55		1.30	44.24	
Mean Length		504		603	527		597	535	
Std. Error		4		8	2		20	2	
Sample Size		9		20	202		7	238	
Females		38,908		82,140	1,167,253		8,646	1,296,947	
Percent		1.67		3.53	50.19		0.37	55.76	
Mean Length		509		581	504		565	510	
Std. Error		7		8	2		10	2	
Sample Size		9		19	270		2	300	
Both Sexes		77,816		168,603	2,040,531		38,908	2,325,858	
Percent		3.35		7.25	87.73		1.67	100.00	
Mean Length		507		592	514		590	521	
Std. Error		4		6	1		16	1	
Sample Size		18		39	472		9	538	
Sample Period 4: 5 - 7 July									
Males		45,654	8,301	70,556	763,669		16,601	904,781	
Percent		2.04	0.37	3.16	34.20		0.74	40.52	
Mean Length		519	350	603	523		635	529	
Std. Error		4	10	9	2		13	2	
Sample Size		11	2	17	184		4	218	
Females		70,556		41,504	1,216,059			1,328,119	
Percent		3.16		1.86	54.46			59.48	
Mean Length		498		572	502			504	
Std. Error		7		12	2			2	
Sample Size		17		10	293			320	
Both Sexes		116,210	8,301	112,060	1,979,728		16,601	2,232,900	
Percent		5.20	0.37	5.02	88.66		0.74	100.00	
Mean Length		506	350	591	510		635	514	
Std. Error		4	10	7	1		13	1	
Sample Size		28	2	27	477		4	538	

Table 12. (p 3 of 4).

	Age Group								
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	Total
Sample Period 5: 8 - 10 July									
Males	19,409	4,313	32,348	282,503	2,157	8,626	349,356		
Percent	1.83	0.41	3.06	26.68	0.20	0.81	32.99		
Mean Length	492	383	604	514	620	606	523		
Std. Error	4	13	7	3		23	3		
Sample Size	9	2	15	131	1	4	162		
Females	45,287		12,939	649,111		2,157	709,494		
Percent	4.28		1.22	61.30		0.20	67.01		
Mean Length	478		575	490		575	491		
Std. Error	6		8	1			1		
Sample Size	21		6	301		1	329		
Both Sexes	64,696	4,313	45,287	931,614	2,157	10,783	1,058,850		
Percent	6.11	0.41	4.28	87.98	0.20	1.02	100.00		
Mean Length	482	383	596	497	620	600	502		
Std. Error	4	13	6	1		23	1		
Sample Size	30	2	21	432	1	5	491		
Sample Period 6: 11 ~ 26 July									
Males	1,934	7,737	13,540	15,474	141,206		179,891		
Percent	0.30	1.19	2.09	2.39	21.79		27.76		
Mean Length	475	478	371	563	497		492		
Std. Error	18		9	22	4		4		
Sample Size	1	4	7	8	73		93		
Females	27,080	1,934	7,737	431,352			468,103		
Percent	4.18	0.30	1.19	66.57			72.24		
Mean Length	474	475	584	482			483		
Std. Error	4		28	5			4		
Sample Size	14	1	4	223			242		
Both Sexes	1,934	34,817	15,474	23,211	572,558		647,994		
Percent	0.30	5.37	2.39	3.58	88.36		100.00		
Mean Length	475	475	384	570	486		486		
Std. Error	5		9	18	4		3		
Sample Size	1	18	8	12	296		335		

-Continued-

Table 12. (p 4 of 4).

	Age Group								
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	Total
All Periods Combined									
Males	2,471	1,934	152,582	26,154	289,167	2,803,734	2,157	77,838	3,356,037
Percent	0.03	0.02	1.83	0.31	3.48	33.71	0.03	0.94	40.35
Mean Length	430	475	514	366	601	524	620	611	531
Std. Error			3	6	4	1		9	1
Sample Size	1	1	54	11	108	968	1	29	1,173
Females		2,471	236,394	1,934	221,319	4,442,575		56,770	4,961,463
Percent		0.03	2.84	0.02	2.66	53.41		0.68	59.65
Mean Length		565	497	475	583	502		592	506
Std. Error			3		4	1		4	1
Sample Size		1	92	1	88	1,604		33	1,819
Both Sexes	2,471	4,405	388,976	28,088	510,486	7,246,309	2,157	134,608	8,317,500
Percent	0.03	0.05	4.68	0.34	6.14	87.12	0.03	1.62	100.00
Mean Length	430	525	504	374	594	510	620	603	516
Std. Error			2	6	3	1		6	1
Sample Size	1	2	146	12	196	2,572	1	62	2,992

Table 13. Age and sex composition of sockeye salmon estimated catch and escapement, Branch River, 1989.

	Age Group							
	1.1	1.2	2.1	0.4	1.3	2.2	2.3	Total
<u>CATCH</u>								
Males		95,568	4		55,489	12,173	1,325	164,559
Percent		17.85	0.00 ^a		10.36	2.27	0.25	30.74
Females		115,307		26	47,058	10,646	1,001	174,038
Percent		21.54		0.00 ^a	8.79	1.99	0.19	32.51
Both Sexes		210,875	4	26	102,547	22,819	2,326	338,597
Percent		39.39	0.00 ^a	0.00 ^a	19.15	4.26	0.43	63.25
<u>ESCAPEMENT</u>								
Males	1,476	68,689	256		19,489	8,942	394	99,246
Percent	0.28	12.83	0.05		3.64	1.67	0.07	18.54
Females		68,689			19,489	8,943	393	97,514
Percent		12.83			3.64	1.67	0.07	18.21
Both Sexes	1,476	137,378	256		38,978	17,885	787	196,760
Percent	0.28	25.66	0.05		7.28	3.34	0.15	36.75
<u>CATCH AND ESCAPEMENT</u>								
Males	1,476	164,257	260		74,978	21,115	1,719	263,805
Percent	0.28	30.68	0.05		14.01	3.94	0.32	49.28
Females		183,996		26	66,547	19,589	1,394	271,552
Percent		34.37		0.00 ^a	12.43	3.66	0.26	50.72
Both Sexes	1,476	348,253	260	26	141,525	40,704	3,113	535,357
Percent	0.28	65.05	0.05	0.00 ^a	26.44	7.60	0.58	100.00

^a Represented < 0.01% of total

Table 14. Age and sex composition of sockeye salmon estimated catch and escapement, Naknek River, 1989.

	Age Group										
	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
<u>CATCH</u>											
Males		220,271		265		265,002		352,034		1,407	
Percent		6.91		0.01		8.31		11.04		0.04	
Females	4,718	163,682			141	372,631		304,514		874	187,368
Percent	0.15	5.13			0.00 ^a	11.69		9.55		0.03	5.88
Both Sexes	4,718	383,953		265	141	637,633		656,548		2,281	335,752
Percent	0.15	12.04		0.01	0.00 ^a	20.00		20.59		0.07	10.53
<u>ESCAPEMENT</u>											
Males	2,870		158,318	17,045		93,074	258,597	1,128	44,121	564	575,717
Percent	0.09		4.97	0.53		2.92	8.11	0.04	1.38	0.02	18.06
Females		971	97,506	1,899		154,324	255,800	1,128	73,553	1,086	586,267
Percent		0.03	3.06	0.06		4.84	8.02	0.04	2.31	0.03	18.39
Both Sexes	2,870	971	255,824	18,944		247,398	514,397	2,256	117,674	1,650	1,161,984
Percent	0.09	0.03	8.02	0.59		7.76	16.13	0.07	3.69	0.05	36.44
<u>CATCH AND ESCAPEMENT</u>											
Males	2,870		378,589	17,310		358,076	610,631	2,535	192,505	4,132	1,566,648
Percent	0.09		11.87	0.54		11.23	19.15	0.08	6.04	0.13	49.13
Females		5,689	261,188	1,899	141	526,955	560,314	2,002	260,921	2,805	1,621,914
Percent		0.18	8.19	0.06	0.00 ^a	16.53	17.57	0.06	8.18	0.09	50.87
Both Sexes	2,870	5,689	639,777	19,209	141	885,031	1,170,945	4,537	453,426	6,937	3,188,562
Percent	0.09	0.18	20.06	0.60	0.00 ^a	27.76	36.72	0.14	14.22	0.22	100.00

^a Represented < 0.01% of total

Table 15. Daily sockeye salmon escapement counts, Naknek River, 1989.

Date	Daily Count	Cumulative Count	Daily Percent of Total	Cumulative Percent
June 22	840	840	0.07	0.07
	972	1,812	0.08	0.16
24	7,902	9,714	0.68	0.84
	28,800	38,514	2.48	3.31
	36,534	75,048	3.14	6.46
	6,030	81,078	0.52	6.98
	66,306	147,384	5.71	12.68
	226,428	373,812	19.49	32.17
	68,184	441,996	5.87	38.04
	72,564	514,560	6.24	44.28
	195,618	710,178	16.83	61.12
	121,878	832,056	10.49	71.61
	31,716	863,772	2.73	74.34
	27,492	891,264	2.37	76.70
	47,520	938,784	4.09	80.79
	26,808	965,592	2.31	83.10
	28,584	994,176	2.46	85.56
	18,258	1,012,434	1.57	87.13
	5,172	1,017,606	0.45	87.57
	17,616	1,035,222	1.52	89.09
	14,292	1,049,514	1.23	90.32
	22,020	1,071,534	1.90	92.22
	14,310	1,085,844	1.23	93.45
	48,120	1,133,964	4.14	97.59
	9,804	1,143,768	0.84	98.43
	5,148	1,148,916	0.44	98.88
	6,558	1,155,474	0.56	99.44
	4,836	1,160,310	0.42	99.86
	1,674	1,161,984	0.14	100.00

Table 16. Age, sex, and size composition of sockeye salmon escapement, Naknek River, 1989.

	Age Group										
	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	2.4	Total	
Sample Period 1: 21 - 29 June											
Males	564		41,159	2,255	38,904	77,806	1,128	18,606	564	180,986	
Percent	0.15		11.01	0.60	10.41	20.81	0.30	4.98	0.15	48.42	
Mean Length	332		472	359	587	498	621	593	649	520	
Std. Error			5	13	4	3	20	5		2	
Sample Size	1		73	4	69	138	2	33	1	321	
Females		564	27,627		72,732	62,020	1,128	28,755		192,826	
Percent	0.15		7.39		19.46	16.59	0.30	7.69		51.58	
Mean Length		594	481		572	499	584	578		536	
Std. Error			5		2	3	13	3		2	
Sample Size		1	49		129	110	2	51		342	
Both Sexes	564	564	68,786	2,255	111,636	139,826	2,256	47,361	564	373,812	
Percent	0.15	0.15	18.40	0.60	29.86	37.41	0.60	12.67	0.15	100.00	
Mean Length	332	594	476	359	577	499	602	584	649	529	
Std. Error			4	13	2	2	12	3		1	
Sample Size	1	1	122	4	198	248	4	84	1	663	
Sample Period 2: 30 June - 6 July											
Males	1,086		95,611	8,692	45,632	130,378		17,384		298,783	
Percent	0.19		16.92	1.54	8.08	23.08		3.08		52.88	
Mean Length	314		461	352	576	484		603		493	
Std. Error			4	4	7	4		4		2	
Sample Size	1		88	8	42	120		16		275	
Females		40,200	1,086	67,362	120,601		35,854	1,086		266,189	
Percent		7.12	0.19	11.92	21.35		6.35	0.19		47.12	
Mean Length		478	380	560	490		574	616		517	
Std. Error		7		6	3		7			2	
Sample Size		37	1	62	111		33	1		245	
Both Sexes	1,086		135,811	9,778	112,994	250,979		53,238	1,086	564,972	
Percent	0.19		24.04	1.73	20.00	44.42		9.42	0.19	100.00	
Mean Length	314		466	355	567	487		584	616	505	
Std. Error			3	4	4	2		5		2	
Sample Size	1		125	9	104	231		49	1	520	
Sample Period 3: 6 - 20 July											
Males	1,220		21,548	6,098	8,538	50,413		8,131		95,948	
Percent	0.55		9.65	2.73	3.83	22.59		3.64		42.99	
Mean Length	341		456	354	573	481		596		483	
Std. Error	10		6	5	12	3		8		2	
Sample Size	3		53	15	21	124		20		236	
Females		407	29,679	813	14,230	73,179		8,944		127,252	
Percent	0.18		13.30	0.36	6.38	32.79		4.01		57.01	
Mean Length	530		475	410	563	500		571		506	
Std. Error			3	70	5	2		6		2	
Sample Size		1	73	2	35	180		22		313	
Both Sexes	1,220	407	51,227	6,911	22,768	123,592		17,075		223,200	
Percent	0.55	0.18	22.95	3.10	10.20	55.37		7.65		100.00	
Mean Length	341	530	467	361	567	492		583		496	
Std. Error	10		3	10	5	2		5		1	
Sample Size	3	1	126	17	56	304		42		549	

-Continued-

Table 16. (p 2 of 2).

	Age Group									
	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	2.4	Total
All Periods Combined										
Males	2,870		158,318	17,045	93,074	258,597	1,128	44,121	564	575,717
Percent	0.25		13.62	1.47	8.01	22.25	0.10	3.80	0.05	49.55
Mean Length	329		463	354	580	488	621	598	649	500
Std. Error	10		3	3	4	2	20	3	1	
Sample Size	5		214	27	132	382	2	69	1	832
Females		971	97,506	1,899	154,324	255,800	1,128	73,553	1,086	586,267
Percent		0.08	8.39	0.16	13.28	22.01	0.10	6.33	0.09	50.45
Mean Length		567	478	393	566	495	584	575	616	521
Std. Error			4	70	3	2	13	4	1	
Sample Size		2	159	3	226	401	2	106	1	900
Both Sexes	2,870	971	255,824	18,944	247,398	514,397	2,256	117,674	1,650	1,161,984
Percent	0.25	0.08	22.02	1.63	21.29	44.27	0.19	10.13	0.14	100.00
Mean Length	329	567	469	358	571	491	602	584	627	511
Std. Error	10		2	5	2	1	12	3	1	
Sample Size	5	2	373	30	358	783	4	175	2	1,732

Table 17. Age, sex, and size composition of chinook salmon escapement,
Branch River, 1989.

	Age Group						
	1.1	1.2	1.3	1.4	2.3	1.5	Total
<u>Males</u>							
Percent	2.05	6.85	19.86	34.93	0.68	4.79	69.18
Mean Length	538	600	759	932	702	994	845
Std. Error	114	27	25	12		30	15
Sample Size	3	10	29	51	1	7	111
Mean Weight	3.50	3.94	8.13	15.06	5.50	15.63	11.72
Std. Error	0.23	0.05	0.08	0.05		0.13	0.05
Sample Size	3	10	29	51	1	7	111
<u>Females</u>							
Percent		5.48	23.29		2.05		30.82
Mean Length		895	905		1,041		911
Std. Error		23	14		16		11
Sample Size		8	34		3		51
Mean Weight		12.19	12.99		17.80		12.99
Std. Error		0.09	0.04		0.06		0.04
Sample Size		8	34		3		51
<u>All Fish</u>							
Percent	2.05	6.85	25.34	58.22	0.68	6.85	100.00
Mean Length	538	600	788	921	702	1,008	866
Std. Error	114	27	22	9		22	11
Sample Size	3	10	37	85	1	10	162
Mean Weight	3.50	3.94	9.01	14.24	5.50	16.28	11.72
Std. Error	0.23	0.05	0.07	0.04		0.09	0.05
Sample Size	3	10	37	85	1	10	162

Table 18. Age, sex, and size composition of chinook salmon escapement and sport harvest, Naknek River, 1989.

	Age Group						
	1.1	1.2	1.3	2.2	1.4	1.5	Total
Big Creek Escapement							
<u>Males</u>							
Percent	5.33	17.67	11.33		28.00	2.00	64.33
Mean Length	379	456	665		859	974	674
Std. Error	8	14	23		10	21	15
Sample Size	16	53	34		84	6	222
<u>Females</u>							
Percent			4.33		28.33	2.33	35.00
Mean Length			760		846	868	835
Std. Error			14		6	27	6
Sample Size			12		85	7	116
<u>All Fish</u>							
Percent	5.33	17.67	15.67		57.00	4.33	100.00
Mean Length	379	456	690		851	917	730
Std. Error	8	14	18		6	23	11
Sample Size	16	53	46		171	13	300
Naknek River Escapement							
<u>Males</u>							
Percent	7.52	15.41	14.76	0.38	21.43	3.76	63.16
Mean Length	397	484	786	416	898	958	716
Std. Error	21	16	27		15	13	17
Sample Size	20	39	39	1	57	10	191
<u>Females</u>							
Percent			10.53		24.44	1.88	36.84
Mean Length			842		855	879	854
Std. Error			11		7	29	6
Sample Size			27		65	5	108
<u>All Fish</u>							
Percent	7.52	15.41	25.19	0.38	45.86	5.64	100.00
Mean Length	397	484	809	416	874	932	766
Std. Error	21	16	17		8	16	12
Sample Size	20	39	66	1	122	15	299

-Continued-

Table 18. (p 2 of 2).

	Age Group						
	1.1	1.2	1.3	2.2	1.4	1.5	Total
Lower Naknek River Sport Harvest							
<u>Males</u>							
Percent	0.94	15.09	9.91		18.87	0.94	45.75
Mean Length	372	504	790		921	945	741
Std. Error	38	17	23		12	150	20
Sample Size	2	32	21		39	2	116
Mean Weight	1.13	2.71	8.74		13.99	14.87	8.90
Std. Error	0.01	0.03	0.09		0.06	0.71	0.06
Sample Size	2	32	18		40	2	113
<u>Females</u>							
Percent	0.47	0.94	10.38		30.19	6.60	48.58
Mean Length	650	613	798		887	910	866
Std. Error		7	21		8	13	8
Sample Size	1	2	22		63	14	124
Mean Weight	4.75	4.00	10.15		12.37	12.52	11.66
Std. Error		0.03	0.09		0.04	0.07	0.03
Sample Size	1	2	21		63	14	123
<u>All Fish</u>							
Percent	1.42	18.40	22.17		50.00	8.02	100.00
Mean Length	465	503	782		902	914	796
Std. Error	95	15	18		7	17	11
Sample Size	3	39	46		104	17	254
Mean Weight	2.33	2.66	9.19		13.09	12.79	10.10
Std. Error	0.12	0.03	0.07		0.04	0.09	0.03
Sample Size	3	39	42		105	17	250

Table 19. Age composition of coho salmon commercial catch, Naknek-Kvichak District, 1989.

	Age Group			Total
	1.1	2.1	3.1	
All Periods Combined				
Both Sexes	4,134	18,229	188	22,551
Percent ^a	18.33	80.83	0.83	100.00
Sample Size	22	97	1	120

^a Based on a sample size of 120 and given these estimated age proportions, this sample would estimate the true age composition within 10 percentage points 95% of the time.

Table 20. Age, sex, and size composition of coho salmon sport harvest, Lower Naknek River, 1989.

	Age Group				
	1.1	1.2	2.1	2.2	Total
All Periods Combined					
Males					
Percent	5.08		52.12	0.42	57.63
Mean Length	615		606	405	606
Std. Error	10		4		3
Sample Size	12		123	1	188
Mean Weight	4.56		4.30	1.10	4.29
Std. Error	0.02		0.01		0.01
Sample Size	12		113	1	175
Females					
Percent	3.39	0.42	37.29	1.27	42.37
Mean Length	607	600	593	595	595
Std. Error	12		3	19	3
Sample Size	8	1	88	3	130
Mean Weight	4.06	3.60	3.79	3.70	3.82
Std. Error	0.01		0.01	0.02	0.01
Sample Size	6	1	80	3	119
All Fish					
Percent	8.47	0.42	89.41	1.69	100.00
Mean Length	612	600	601	547	602
Std. Error	8		3	49	2
Sample Size	20	1	211	4	318
Mean Weight	4.39	3.60	4.09	3.05	4.10
Std. Error	0.02		0.01	0.07	0.01
Sample Size	18	1	193	4	294

Table 21. Commercial salmon catch by period and species,
Egegik District, 1989.

Period	Hours ^b	Opening		Effort ^a		Catch (number of fish)				Total
		Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total	
6/01	12			0	0	0	0	0	0	0
6/02	9			0	0	0	0	0	0	0
6/05	15			61	7	3	0	0	71	
6/06	24			73	7	54	0	0	134	
6/07	24			86	13	49	0	0	148	
6/08	24			48	17	19	0	0	84	
6/09	9			162	37	78	0	0	277	
6/12	15			7,478	147	1,582	0	0	9,207	
6/13	24	263	105	8,964	126	1,432	0	0	10,522	
6/14	24			9,931	79	945	0	0	10,955	
6/15	24			17,586	108	1,011	0	0	18,705	
6/16	9			13,706	61	722	0	0	14,489	
6/18-6/19 ^c	0			1,491	2	45	0	0	1,538	
6/20	12	542	128	171,014	175	4,243	0	0	175,432	
6/21-6/22 ^c	0			3,038	6	29	0	0	3,073	
6/23	11	665	228	264,810	72	3,888	0	0	268,770	
6/25	10	598	252	208,422	94	3,737	0	0	212,253	
6/27 ^c	0			4,948	0	23	0	0	4,971	
6/28	12		249	1,229,123	63	11,569	0	0	1,240,755	
6/29 ^c	0			6,715	0	24	0	0	6,739	
6/30	12			486,488	107	4,379	0	0	490,974	
7/01 ^c	0			508	0	3	0	0	511	
7/02	10			1,107,282	59	6,792	0	0	1,114,133	
7/04	10	511	259	882,041	31	7,940	0	0	890,012	
7/06	22	414	221	917,252	51	7,659	0	0	924,962	
7/07	10			357,925	43	2,967	0	0	360,935	
7/08	15	244	224	191,433	25	2,037	0	0	193,495	
7/09	20.5	276	227	230,414	56	3,325	0	0	233,795	
7/10	24			270,150	53	4,251	0	0	274,454	
7/11	24	267	243	394,439	17	5,939	0	0	400,395	
7/12	24		240	559,970	52	5,524	0	0	565,546	
7/13	24			336,510	16	4,509	0	0	341,035	
7/14	10			225,691	20	2,969	0	0	228,680	
7/15	24			139,433	45	3,468	0	0	142,946	
7/16	24			139,629	29	5,466	0	0	145,124	
7/17	24	169	196	180,707	25	6,515	0	0	187,247	
7/18	24			145,430	22	4,735	0	0	150,187	
7/19	24			56,705	12	2,363	0	1	59,081	
7/20	24			39,288	12	2,207	0	0	41,507	
7/21	24			23,787	10	1,635	0	30	25,462	
7/22	24			17,460	16	1,214	2	82	18,774	
7/23	24			14,845	6	958	3	189	16,001	
7/24	24			14,817	9	1,014	0	358	16,198	
7/25	24			8,565	5	1,836	3	611	11,020	
7/26	24	33	92	3,106	9	522	0	554	4,191	
7/27	24			2,095	2	303	0	295	2,695	
7/28	9			968	0	177	0	203	1,348	
7/31	15			1,364	5	1,493	0	1,661	4,523	
8/01	24			1,804	6	1,649	0	2,140	5,599	
8/02	24			754	4	1,137	0	1,672	3,567	
8/03	24			573	2	601	0	1,743	2,919	
8/04	9			246	4	248	0	701	1,199	
8/07	15			262	1	618	0	2,309	3,190	
8/08	24			212	0	626	0	2,045	2,883	
8/09	24	3	64	220	1	915	0	3,049	4,185	
8/10	24			182	2	755	0	2,924	3,863	
8/11	9			39	0	100	0	418	557	

-Continued-

Table 21. (p 2 of 2).

Opening Period	Hours ^b	Effort ^a		Catch (number of fish)					
		Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
8/14	15			128	1	410	0	3,625	4,164
8/15	24			130	2	229	0	3,151	3,512
8/16	24			80	0	167	0	2,878	3,125
8/17	24			40	0	115	0	2,004	2,159
8/18	9			12	0	21	0	560	593
8/21	15			47	1	42	0	1,613	1,703
8/22	24	10	48	45	1	18	0	1,548	1,612
8/23	24			25	0	15	0	2,088	2,128
8/24	24			25	0	13	0	2,048	2,086
8/25	9			8	0	12	0	767	787
8/28	15			10	0	8	0	1,494	1,512
8/29	24			13	0	7	0	1,604	1,624
8/30	24			9	0	5	0	2,127	2,141
8/31	24			2	0	1	0	541	544
9/01	9			0	0	0	0	165	165
9/04	15			0	0	0	0	584	584
9/05	24			0	0	0	0	645	645
9/06	24			0	0	0	0	452	452
9/07	24			0	0	0	0	227	227
9/08	9			0	0	0	0	0	0
Total	1,360.5 h			8,700,824	1,776	129,365	8	49,106	8,881,079
Percent of District Catch				98.0	0.0 ^d	1.4	0.0 ^d	0.6	100.0

^a Fishing effort represents number of drift boats and set nets estimated from aerial surveys on open fishing periods. Blanks indicate no aerial surveys were conducted.

^b See Table 2 for emergency fishing periods.

^c ADF&G test-fish catch

^d Represented less than 0.1% of total

Table 22. Age and sex composition of sockeye salmon catch and escapement, Egegik District, 1989.

	Age Group													
	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total	
<u>CATCH</u>														
Males	4,983	247,328			384,645	2,567,588		5,096	1,063,995	6,487		740	4,280,862	
Percent	0.05	2.40			3.73	24.90		0.05	10.32	0.06		0.01	41.51	
Females	3,370	227,448	2,573	444,819	2,749,327	926	1,490	976,572	11,781	1,656			4,419,962	
Percent	0.03	2.21	0.02	4.31	26.66	0.01	0.01	9.47	0.11	0.02			42.86	
Both Sexes	8,353	474,776	2,573	829,464	5,316,915	926	6,586	2,040,567	18,268	1,656	740		8,700,824	
Percent	0.08	4.60	0.02	8.04	51.56	0.01	0.06	19.79	0.18	0.02	0.01		84.38	
<u>ESCAPEMENT^a</u>														
Males	721		29,631	24,441	44,140	325,552	451	263	250,059				675,258	
Percent	0.01		0.29	0.24	0.43	3.16	0.00 ^b	0.00 ^b	2.42				6.55	
Females	902		35,673	3,861	53,334	523,954	1,269		315,618	818		229	935,658	
Percent	0.01		0.35	0.04	0.52	5.08	0.01		3.06	0.01		0.00 ^b	9.07	
Both Sexes	1,623		65,304	28,302	97,474	849,506	1,720	263	565,677	818		229	1,610,916	
Percent	0.02		0.63	0.27	0.95	8.24	0.02	0.00 ^b	5.49	0.01		0.00 ^b	15.62	
<u>CATCH AND ESCAPEMENT</u>														
Males	721	4,983	276,959	24,441	428,785	2,893,140	451	5,359	1,314,054	6,487		740	4,956,120	
Percent	0.01	0.05	2.69	0.24	4.16	28.06	0.00	0.05	12.74	0.06		0.01	48.06	
Females	902	3,370	263,121	6,434	498,153	3,273,281	2,195	1,490	1,292,190	12,599	1,656	229	5,355,620	
Percent	0.01	0.03	2.55	0.06	4.83	31.74	0.02	0.01	12.53	0.12	0.02	0.00 ^b	51.94	
Both Sexes	1,623	8,353	540,080	30,875	926,938	6,166,421	2,646	6,849	2,606,244	19,086	1,656	969	10,311,740	
Percent	0.02	0.08	5.24	0.30	8.99	59.80	0.03	0.07	25.27	0.19	0.02	0.01	100.00	

^a An additional 50 and 600 sockeye salmon were counted in Shosky Creek and King Salmon River but were not sampled.

^b Represented < 0.01% of total

Table 23. Age, sex, and size composition of sockeye salmon commercial catch, Egegik District, 1989.

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 1: 5 - 19 June												
Males	201	1,007		5,234	8,052			16,104			201	30,799
Percent	0.34	1.69		8.78	13.51			27.03			0.34	51.69
Sample Size	1	5		26	40			80			1	153
Females				3,825	8,253		201	16,507				28,786
Percent				6.42	13.85		0.34	27.70				48.31
Sample Size				19	41		1	82				143
Both Sexes	201	1,007		9,059	16,305		201	32,611			201	59,585
Percent	0.34	1.69		15.20	27.36		0.34	54.73			0.34	100.00
Sample Size	1	5		45	81		1	162			1	296

-Continued-

Table 23. (p 2 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 2: 20 - 22 June												
Males	346	2,076		5,536	29,758		346	37,718				75,780
Percent	0.20	1.19		3.18	17.10		0.20	21.67				43.54
Mean Length	595	509		592	533		635	609				575
Std. Error		13		9	3			2				2
Sample Size	1	6		16	86		1	109				219
Mean Weight		2.25		3.42	2.52		4.80	3.69				3.17
Std. Error		0.19		0.16	0.06			0.08				0.05
Sample Size		6		14	53		1	73				147
Females		2,422		346	13,495		40,139		41,870			98,272
Percent		1.39		0.20	7.75		23.06		24.06			56.46
Mean Length		511		480	573		531		583			558
Std. Error		7		4	2			2				1
Sample Size		7		1	39		116		121			284
Mean Weight		2.34		1.95	3.03		2.49		3.15			2.84
Std. Error		0.11		0.10	0.05			0.04				0.03
Sample Size		7		1	29		83		76			196
Both Sexes	346	4,498		346	19,031		69,897		346	79,588		174,052
Percent	0.20	2.58		0.20	10.93		40.16		0.20	45.73		100.00
Mean Length	595	510		480	579		532		635	595		566
Std. Error		7		4	2			2				1
Sample Size	1	13		1	55		202		1	230		503
Mean Weight		2.30		1.95	3.14		2.50		4.80	3.41		2.98
Std. Error		0.11		0.08	0.04			0.04		0.04		0.03
Sample Size		13		1	43		136		1	149		343

-Continued-

Table 23. (p 3 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 3: 23 - 24 June												
Males	15,641		24,809	60,405		53,393		539	154,787			
Percent	5.91		9.37	22.81		20.16		0.20	58.45			
Mean Length	527		585	540		593		617	564			
Std. Error	4		5	3		3			2			
Sample Size	29		46	112		99		1	287			
Mean Weight	3.10		3.14	2.48		3.29			2.93			
Std. Error	0.30		0.23	0.08		0.09			0.06			
Sample Size	2		4	30		17			53			
Females	9,708		21,573	40,989		37,753			110,023			
Percent	3.67		8.15	15.48		14.26			41.55			
Mean Length	520		566	542		575			556			
Std. Error	7		5	4		4			2			
Sample Size	18		40	76		70			204			
Mean Weight			3.04	2.32		2.81			2.66			
Std. Error			0.12	0.11		0.16			0.08			
Sample Size			7	14		12			33			
Both Sexes	25,349		46,382	101,394		91,146		539	264,810			
Percent	9.57		17.52	38.29		34.42		0.20	100.00			
Mean Length	524		576	541		585		617	561			
Std. Error	4		3	2		2			1			
Sample Size	47		86	188		169		1	491			
Mean Weight	3.10		3.09	2.42		3.09			2.82			
Std. Error	0.30		0.13	0.07		0.08			0.05			
Sample Size	2		11	44		29			86			

-Continued-

Table 23. (p 4 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 4: 25 - 26 June												
Males	7,961		15,197	33,290		32,566						89,014
Percent	3.82		7.29	15.97		15.62						42.71
Mean Length	539		600	537		594						569
Std. Error	6		7	5		5						3
Sample Size	11		21	46		45						123
Mean Weight	2.52		3.31	2.52		3.57						3.04
Std. Error	0.32		0.29	0.21		0.25						0.13
Sample Size	3		5	8		7						23
Females	724	8,684	18,816	36,908		53,553		724				119,409
Percent	0.35	4.17	9.03	17.71		25.69		0.35				57.29
Mean Length	516		637	528		573		520				561
Std. Error	14		43	3		3						7
Sample Size	1	12	26	51		74		1				165
Mean Weight	2.12		2.86	2.06		2.83						2.54
Std. Error	0.14		0.11	0.06		0.09						0.05
Sample Size	4		4	5		11						24
Both Sexes	724	16,645	34,013	70,198		86,119		724				208,423
Percent	0.35	7.99	16.32	33.68		41.32		0.35				100.00
Mean Length	527		620	532		581		520				564
Std. Error	8		24	3		3						4
Sample Size	1	23	47	97		119		1				288
Mean Weight	2.31		3.06	2.28		3.11						2.76
Std. Error	0.17		0.14	0.10		0.11						0.06
Sample Size	7		9	13		18						47

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Table 23. (p 5 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 5: 27 - 28 June												
Males	1,714	34,280		78,843	354,795		178,255					647,887
Percent	0.14	2.78		6.39	28.75		14.44					52.50
Mean Length	560	525		585	537		596					559
Std. Error		9		5	2		3					1
Sample Size	1	20		46	207		104					378
Mean Weight		2.46		3.24	2.36		3.43					2.77
Std. Error		0.18		0.13	0.06		0.13					0.05
Sample Size		4		13	46		23					86
Females	1,714	22,282		107,981	317,088		135,405	1,714				586,184
Percent	0.14	1.81		8.75	25.69		10.97	0.14				47.50
Mean Length	564	521		573	523		579	496				545
Std. Error		7		3	2		3					1
Sample Size	1	13		63	185		79	1				342
Mean Weight		1.83		2.77	2.21		2.74					2.42
Std. Error				0.13	0.06		0.14					0.05
Sample Size		1		8	33		8					50
Both Sexes	3,428	56,562		186,824	671,883		313,660	1,714				1,234,071
Percent	0.28	4.58		15.14	54.44		25.42	0.14				100.00
Mean Length	562	523		578	530		589	496				552
Std. Error		6		3	1		2					1
Sample Size	2	33		109	392		183	1				720
Mean Weight		2.21		2.97	2.29		3.13					2.60
Std. Error		0.18		0.09	0.04		0.10					0.04
Sample Size		5		21	79		31					136

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Table 23. (p 6 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 6: 29 - 30 June												
Males	13,486		14,449	107,889		81,879						217,703
Percent	2.73		2.93	21.88		16.60						44.14
Mean Length	549		573	539		601						565
Std. Error	9		13	2		3						2
Sample Size	14		15	112		85						226
Mean Weight	2.52			2.39		3.61						2.89
Std. Error				0.14		0.17						0.10
Sample Size	1			18		14						33
Females	11,559	963	40,458	106,925		115,595						275,500
Percent	2.34	0.20	8.20	21.68		23.44						55.86
Mean Length	512	349	575	527		585						557
Std. Error	12		4	3		2						2
Sample Size	12	1	42	111		120						286
Mean Weight	2.10		2.83	2.04		2.87						2.51
Std. Error			0.11	0.09		0.06						0.05
Sample Size	1		9	21		23						54
Both Sexes	25,045	963	54,907	214,814		197,474						493,203
Percent	5.08	0.20	11.13	43.55		40.04						100.00
Mean Length	532	349	575	533		591						561
Std. Error	7		5	2		2						1
Sample Size	26	1	57	223		205						512
Mean Weight	2.33		2.83	2.22		3.18						2.67
Std. Error			0.11	0.08		0.08						0.05
Sample Size	2		9	39		37						87

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Table 23. (p 7 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 7: 1 - 2 July												
Males	27,885		63,375	319,409		2,535	121,679					534,883
Percent	2.52		5.72	28.83		0.23	10.98					48.28
Mean Length	513		580	536		556	581					551
Std. Error	6		7	3			5					2
Sample Size	11		25	126		1	48					211
Mean Weight	2.32		4.18	2.37		2.33	3.22					2.78
Std. Error	0.18		0.81	0.08			0.18					0.12
Sample Size	3		5	24		1	8					41
Females	27,885		68,445	311,803		164,774						572,907
Percent	2.52		6.18	28.15		14.87						51.72
Mean Length	495		562	524		573						541
Std. Error	4		4	2			3					2
Sample Size	11		27	123		65						226
Mean Weight	1.68		2.66	2.55		2.79						2.59
Std. Error	0.10		0.15	0.24		0.08						0.13
Sample Size	3		7	21		14						45
Both Sexes	55,770		131,820	631,212		2,535	286,453					1,107,790
Percent	5.03		11.90	56.98		0.23	25.86					100.00
Mean Length	504		570	530		556	577					546
Std. Error	4		4	2			3					1
Sample Size	22		52	249		1	113					437
Mean Weight	2.00		3.39	2.46		2.33	2.97					2.68
Std. Error	0.10		0.40	0.12			0.09					0.09
Sample Size	6		12	45		1	22					86

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Table 23. (p 8 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 8: 4 July												
Males	20,219		37,910	308,335			140,267	1,264			507,995	
Percent	2.29		4.30	34.96			15.90	0.14			57.59	
Mean Length	517		589	533			592	525			553	
Std. Error	4		5	1			2				1	
Sample Size	16		30	244			111	1			402	
Mean Weight	2.23		2.65	2.39			3.15				2.61	
Std. Error	0.18		0.52	0.09			0.14				0.08	
Sample Size	2		2	24			17				45	
Females	21,482	1,264	27,801	264,107			59,392				374,046	
Percent	2.44	0.14	3.15	29.94			6.73				42.41	
Mean Length	516	389	565	517			573				529	
Std. Error	7		5	2			4				1	
Sample Size	17	1	22	209			47				296	
Mean Weight	2.53		2.82	2.01			2.45				2.17	
Std. Error	0.26		0.21	0.06			0.16				0.05	
Sample Size	2		5	29			8				44	
Both Sexes	41,701	1,264	65,711	572,442			199,659	1,264			882,041	
Percent	4.73	0.14	7.45	64.90			22.64	0.14			100.00	
Mean Length	516	389	579	526			586	525			543	
Std. Error	4		3	1			2				1	
Sample Size	33	1	52	453			158	1			698	
Mean Weight	2.38		2.72	2.21			2.94				2.43	
Std. Error	0.16		0.31	0.05			0.11				0.05	
Sample Size	4		7	53			25				89	

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Table 23. (p 9 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 9: 6 July												
Males	16,677		31,687	321,872		111,738						481,974
Percent	1.82		3.45	35.09		12.18						52.55
Mean Length	528		589	535		596						553
Std. Error	4		5	2		3						1
Sample Size	10		19	193		67						289
Mean Weight			3.16	2.46		3.45						2.75
Std. Error			0.25	0.10		0.15						0.08
Sample Size			2	21		7						30
Females	11,674		28,351	300,192		95,061						435,278
Percent	1.27		3.09	32.73		10.36						47.45
Mean Length	508		569	519		576						534
Std. Error	6		5	1		3						1
Sample Size	7		17	180		57						261
Mean Weight	1.88		1.98	2.10		2.70						2.22
Std. Error	0.06		0.10	0.06		0.17						0.06
Sample Size	2		2	39		11						54
Both Sexes	28,351		60,038	622,064		206,799						917,252
Percent	3.09		6.55	67.82		22.55						100.00
Mean Length	520		580	527		587						544
Std. Error	4		4	1		2						1
Sample Size	17		36	373		124						550
Mean Weight	1.88		2.60	2.29		3.11						2.49
Std. Error	0.06		0.14	0.06		0.11						0.05
Sample Size	2		4	60		18						84

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Table 23. (p 10 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 10: 7 - 8 July												
Males	858	12,876		14,592	163,091			64,378	858			256,653
Percent	0.16	2.34		2.66	29.69			11.72	0.16			46.72
Mean Length	543	513		584	533			599	527			552
Std. Error		7		9	2			3				1
Sample Size	1	15		17	190			75	1			299
Mean Weight		1.65			2.22			2.60				2.29
Std. Error					0.09			0.79				0.22
Sample Size		1			9			2				12
Females		11,159		12,017	215,451			52,361	1,717			292,705
Percent		2.03		2.19	39.22			9.53	0.31			53.28
Mean Length		498		571	517			574	521			529
Std. Error		6		5	1			3	22			1
Sample Size		13		14	251			61	2			341
Mean Weight		1.53		2.49	1.98			2.50				2.08
Std. Error		0.05			0.04			0.06				0.03
Sample Size		2		1	28			3				34
Both Sexes	858	24,035		26,609	378,542			116,739	2,575			549,358
Percent	0.16	4.38		4.84	68.91			21.25	0.47			100.00
Mean Length	543	506		578	524			588	523			539
Std. Error		5		6	1			2	22			1
Sample Size	1	28		31	441			136	3			640
Mean Weight		1.59		2.49	2.08			2.56				2.17
Std. Error		0.05			0.05			0.44				0.10
Sample Size		3		1	37			5				46

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Table 23. (p 11 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 11: 9 - 10 July												
Males	1,864	22,372		20,507	162,194		19,575	932			227,444	
Percent	0.37	4.47		4.10	32.40		3.91	0.19			45.44	
Mean Length	592	529		584	531		588	542			541	
Std. Error	22	6		7	2		8				2	
Sample Size	2	24		22	174		21	1			244	
Mean Weight		2.42		3.33	2.34						2.45	
Std. Error					0.08						0.06	
Sample Size		1		1	13						15	
Females	932	11,186		17,711	202,277		39,150	932	932		273,120	
Percent	0.19	2.23		3.54	40.41		7.82	0.19	0.19		54.56	
Mean Length	565	503		566	518		572	555	564		529	
Std. Error		4		5	1		4				1	
Sample Size	1	12		19	217		42	1	1		293	
Mean Weight		1.73		2.72	1.93		2.61				2.07	
Std. Error				0.01	0.05		0.17				0.05	
Sample Size		1		2	23		6				32	
Both Sexes	2,796	33,558		38,218	364,471		58,725	1,864	932		500,564	
Percent	0.56	6.70		7.63	72.81		11.73	0.37	0.19		100.00	
Mean Length	583	520		575	524		577	549	564		534	
Std. Error	22	4		4	1		4				1	
Sample Size	3	36		41	391		63	2	1		537	
Mean Weight		2.19		3.05	2.11		2.61				2.23	
Std. Error				0.01	0.05		0.17				0.04	
Sample Size		2		3	36		6				47	

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Table 23. (p 12 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 12: 11 - 12 July												
Males	32,615		34,331	343,313			97,844	3,433			511,536	
Percent	3.42		3.60	35.97			10.25	0.36			53.60	
Mean Length	516		593	531			600	520			547	
Std. Error	4		6	2			4	1			1	
Sample Size	19		20	200			57	2			298	
Mean Weight	2.44		3.72	2.43			3.76				2.77	
Std. Error				0.08							0.05	
Sample Size	1		1	10			1				13	
Females	30,898		37,764	307,265			66,946				442,873	
Percent	3.24		3.96	32.19			7.01				46.40	
Mean Length	513		573	523			577				535	
Std. Error	5		4	2			4				1	
Sample Size	18		22	179			39				258	
Mean Weight	1.95		2.44	2.13			2.62				2.22	
Std. Error	0.16		0.13	0.07			0.11				0.05	
Sample Size	4		2	21			6				33	
Both Sexes	63,513		72,095	650,578			164,790	3,433			954,409	
Percent	6.65		7.55	68.17			17.27	0.36			100.00	
Mean Length	514		582	527			590	520			541	
Std. Error	3		4	1			3	1			1	
Sample Size	37		42	379			96	2			556	
Mean Weight	2.20		3.05	2.29			3.30				2.51	
Std. Error	0.16		0.13	0.05			0.11				0.04	
Sample Size	5		3	31			7				46	

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Table 23. (p 13 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 13: 13 - 14 July												
Males	21,921		10,316	158,603		1,289	41,262					233,391
Percent	3.90		1.83	28.21		0.23	7.34					41.51
Mean Length	519		586	531		639	583					542
Std. Error	6		12	3			8					2
Sample Size	17		8	123		1	32					181
Mean Weight				2.32			3.27					2.52
Std. Error				0.16			0.19					0.14
Sample Size				17			4					21
Females	28,368		23,210	246,286		1,289	28,368	1,289				328,810
Percent	5.05		4.13	43.81		0.23	5.05	0.23				58.49
Mean Length	505		563	509		593	556	538				517
Std. Error	8		4	2			7					2
Sample Size	22		18	191		1	22	1				255
Mean Weight	1.93			1.96			1.94					1.96
Std. Error	0.12			0.05			0.16					0.04
Sample Size	3			21			2					26
Both Sexes	50,289		33,526	404,889		2,578	69,630	1,289				562,201
Percent	8.95		5.96	72.02		0.46	12.39	0.23				100.00
Mean Length	511		570	517		616	572	538				527
Std. Error	5		5	2			6					1
Sample Size	39		26	314		2	54	1				436
Mean Weight	1.93			2.10			2.73					2.18
Std. Error	0.12			0.07			0.13					0.06
Sample Size	3			38			6					47

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Table 23. (p 14 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 14: 15 - 16 July												
Males	5,346		7,484	50,253			25,661					88,744
Percent	1.92		2.68	18.01			9.20					31.80
Mean Length	507		621	530			603					557
Std. Error	6		7	4			10					4
Sample Size	5		7	47			24					83
Females	10,692		8,554	129,373			37,422	4,277				190,318
Percent	3.83		3.07	46.36			13.41	1.53				68.20
Mean Length	504		561	513			566	543				526
Std. Error	4		11	2			5	24				2
Sample Size	10		8	121			35	4				178
Both Sexes	16,038		16,038	179,626			63,083	4,277				279,062
Percent	5.75		5.75	64.37			22.61	1.53				100.00
Mean Length	505		589	518			581	543				536
Std. Error	4		7	2			5	24				2
Sample Size	15		15	168			59	4				261

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Table 23. (p 15 of 16).

	Age Group												
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total	
Sample Period 15: 17 July - 31 August													
Males	12,966		20,375	146,329		926	41,676					222,272	
Percent	2.52		3.96	28.47		0.18	8.11					43.24	
Mean Length	515		582	527		618	599					545	
Std. Error	9		5	2			4					2	
Sample Size	14		22	158		1	45					240	
Mean Weight	1.89		3.72	2.31			3.02					2.55	
Std. Error	0.37		0.18	0.11			0.26					0.09	
Sample Size	3		3	26			8					40	
Females	19,449		14,818	222,271	926		32,415	1,852				291,731	
Percent	3.78		2.88	43.24	0.18		6.31	0.36				56.76	
Mean Length	493		560	511	427		568	543				519	
Std. Error	4		6	1			4	15				1	
Sample Size	21		16	240	1		35	2				315	
Mean Weight	1.92		2.20	1.94			3.10					2.08	
Std. Error	0.21		0.06	0.06			0.05					0.05	
Sample Size	4		3	33			2					42	
Both Sexes	32,415		35,193	368,600	926	926	74,091	1,852				514,003	
Percent	6.31		6.85	71.71	0.18	0.18	14.41	0.36				100.00	
Mean Length	502		572	518	427	618	585	543				530	
Std. Error	4		4	1			3	15				1	
Sample Size	35		38	398	1	1	80	2				555	
Mean Weight	1.91		3.08	2.09			3.06					2.28	
Std. Error	0.19		0.11	0.05			0.15					0.05	
Sample Size	7		6	59			10					82	

-Continued-

Table 23. (p 16 of 16).

	Age Group											
	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
All Periods Combined												
Males	4,983	247,328		384,645	2,567,588		5,096	1,063,995	6,487		740	4,280,862
Percent	0.06	2.84		4.42	29.51		0.06	12.23	0.07		0.01	49.20
Mean Length	549	520		578	532		594	585	525		449	549
Std. Error	22	2		2	1			1	1			1
Sample Size	6	216		340	2,058		4	1,002	5		2	3,633
Mean Weight		2.36		3.43	2.37		2.63	3.31				2.69
Std. Error		0.09		0.21	0.03			0.08				0.03
Sample Size		27		50	299		2	181				559
Females	3,370	227,448		2,573	444,819		2,749,327	926	1,490	976,572	11,781	1,656
Percent	0.04	2.61		0.03	5.11		31.60	0.01	0.02	11.22	0.14	0.02
Mean Length	443	507		386	567		518	427	513	566	533	545
Std. Error		2		2	1				1	14		0
Sample Size	3	193		3	392		2,291	1	2	949	11	2
Mean Weight		1.94		1.95	2.67		2.11			2.70		2.29
Std. Error		0.06			0.05		0.03			0.04		0.02
Sample Size		34		1	79		371			182		667
Both Sexes	8,353	474,776		2,573	829,464		5,316,915	926	6,586	2,040,567	18,268	1,656
Percent	0.10	5.46		0.03	9.53		61.11	0.01	0.08	23.45	0.21	0.02
Mean Length	506	514		386	572		525	427	575	576	530	545
Std. Error	22	1		2	0				1	10		0
Sample Size	9	409		3	732		4,349	1	6	1,951	16	2
Mean Weight		2.15		1.95	3.01		2.24		2.63	3.01		2.48
Std. Error		0.05			0.09		0.02			0.04		0.02
Sample Size		61		1	129		670		2	363		1,226

Table 24. Daily sockeye salmon escapement counts, Egegik River, 1989.

Date	Daily Count ^a	Cumulative Count	Daily Percent of Total	Cumulative Percent
June	13,914	13,914	0.86	0.86
	41,844	55,758	2.60	3.46
	34,860	90,618	2.16	5.63
	5,754	96,372	0.36	5.98
	11,838	108,210	0.73	6.72
	17,034	125,244	1.06	7.77
	7,152	132,396	0.44	8.22
	23,352	155,748	1.45	9.67
	14,040	169,788	0.87	10.54
	58,980	228,768	3.66	14.20
	58,740	287,508	3.65	17.85
	70,632	358,140	4.38	22.23
	222,378	580,518	13.80	36.04
	185,328	765,846	11.50	47.54
	217,002	982,848	13.47	61.01
	269,502	1,252,350	16.73	77.74
	139,800	1,392,150	8.68	86.42
	115,404	1,507,554	7.16	93.58
	36,774	1,544,328	2.28	95.87
	6,972	1,551,300	0.43	96.30
	8,304	1,559,604	0.52	96.81
	7,062	1,566,666	0.44	97.25
	13,158	1,579,824	0.82	98.07
	5,316	1,585,140	0.33	98.40
	5,094	1,590,234	0.32	98.72
	9,936	1,600,170	0.62	99.33
	1,974	1,602,144	0.12	99.46
	2,286	1,604,430	0.14	99.60
	2,874	1,607,304	0.18	99.78
	2,034	1,609,338	0.13	99.90
	1,578	1,610,916	0.10	100.00

^a An additional 50 and 600 sockeye salmon were counted in Shosky Creek and King Salmon River, bringing the Egegik District escapement total to 1,611,566.

Table 25. Age, sex, and size composition of sockeye salmon escapement, Egegik River, 1989.

	Age Group										
	1.1	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	3.3	Total ^a
Sample Period 1: 20 - 26 June											
Males	458	3,663	3,663	3,206	18,088		40,985				70,063
Percent	0.37	2.92	2.92	2.56	14.44		32.72				55.94
Mean Length	325	502	340	608	530		613				569
Std. Error	5	14	10	6	5		2				2
Sample Size	2	16	16	14	79		179				306
Females		1,832	229	2,748	12,593		37,550		229		55,181
Percent		1.46	0.18	2.19	10.05		29.98		0.18		44.06
Mean Length		485	595	568	511		587		515		565
Std. Error		13		8	5		2				2
Sample Size		8	1	12	55		164		1		241
Both Sexes	458	5,495	3,892	5,954	30,681		78,535		229		125,244
Percent	0.37	4.39	3.11	4.75	24.50		62.71		0.18		100.00
Mean Length	325	496	355	589	522		600		515		567
Std. Error	5	10	10	5	4		1				1
Sample Size	2	24	17	26	134		343		1		547
Sample Period 2: 27 June - 1 July											
Males	263	3,419	4,471	3,682	24,984		263	36,292			73,374
Percent	0.16	2.11	2.76	2.27	15.40		0.16	22.37			45.22
Mean Length	304	515	382	609	531		537	611			564
Std. Error		6	17	7	4			4			2
Sample Size	1	13	17	14	95		1	138			279
Females		2,104	263	4,471	39,711		42,341				88,890
Percent		1.30	0.16	2.76	24.47		26.09				54.78
Mean Length		491	614	573	510		584				548
Std. Error		8		6	3		2				2
Sample Size		8	1	17	151		161				338
Both Sexes	263	5,523	4,734	8,153	64,695		263	78,633			162,264
Percent	0.16	3.40	2.92	5.02	39.87		0.16	48.46			100.00
Mean Length	304	506	395	589	518		537	596			555
Std. Error		5	17	5	2			2			1
Sample Size	1	21	18	31	246		1	299			617

-Continued-

Table 25. (p 2 of 3).

	Age Group										
	1.1	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	3.3	Total ^a
Sample Period 3: 2 - 4 July											
Males	9,812	4,906	18,806	107,933			71,955				213,412
Percent	2.05	1.03	3.93	22.56			15.04				44.62
Mean Length	521	361	600	541			608				564
Std. Error	6	7	5	4			3				2
Sample Size	12	6	23	132			88				261
Females	6,541	818	22,895	119,380	818		113,656	818			264,926
Percent	1.37	0.17	4.79	24.96	0.17		23.76	0.17			55.38
Mean Length	506	389	585	515	404		584	556			550
Std. Error	6		4	3			2				2
Sample Size	8	1	28	146	1		139	1			324
Both Sexes	16,353	5,724	41,701	227,313	818		185,611	818			478,338
Percent	3.42	1.20	8.72	47.52	0.17		38.80	0.17			100.00
Mean Length	515	365	591	527	404		594	556			556
Std. Error	4	7	3	2			2				1
Sample Size	20	7	51	278	1		227	1			585
Sample Period 4: 5 - 7 July											
Males	9,580	5,988	10,778	138,913			81,431				246,690
Percent	1.53	0.96	1.72	22.18			13.00				39.39
Mean Length	525	407	605	537			610				561
Std. Error	6	35	7	3			6				3
Sample Size	8	5	9	116			68				206
Females	14,370	1,198	19,160	239,504			105,382				379,614
Percent	2.29	0.19	3.06	38.24			16.83				60.61
Mean Length	501	360	580	514			583				535
Std. Error	7		5	2			3				2
Sample Size	12	1	16	200			88				317
Both Sexes	23,950	7,186	29,938	378,417			186,813				626,304
Percent	3.82	1.15	4.78	60.42			29.83				100.00
Mean Length	510	399	589	522			595				545
Std. Error	5	35	4	2			3				2
Sample Size	20	6	25	316			156				523

-Continued-

Table 25. (p 3 of 3).

	Age Group										
	1.1	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	3.3	Total ^a
Sample Period 5: 8 - 21 July											
Males	3,157	5,413	7,668	35,634	451		19,396				71,719
Percent	1.44	2.47	3.51	16.29	0.21		8.87				32.78
Mean Length	532	394	604	531	410		608				549
Std. Error	27	21	8	5			5				4
Sample Size	7	12	17	79	1		43				159
Females	902	10,826	1,353	4,060	112,766	451		16,689			147,047
Percent	0.41	4.95	0.62	1.86	51.55	0.21		7.63			67.22
Mean Length	347	505	456	573	506	532		563			513
Std. Error	6	7	46	12	2		7				2
Sample Size	2	24	3	9	250	1		37			326
Both Sexes	902	13,983	6,766	11,728	148,400	902		36,085			218,766
Percent	0.41	6.39	3.09	5.36	67.84	0.41		16.49			100.00
Mean Length	347	511	407	593	512	471		587			525
Std. Error	6	8	19	7	2		4				2
Sample Size	2	31	15	26	329	2		80			485
All Periods Combined											
Males	721	29,631	24,441	44,140	325,552	451	263	250,059			675,258
Percent	0.04	1.84	1.52	2.74	20.21	0.03	0.02	15.52			41.92
Mean Length	317	521	380	603	537	410	537	610			562
Std. Error	5	4	10	3	2		2				1
Sample Size	3	56	56	77	501	1	1	516			1,211
Females	902	35,673	3,861	53,334	523,954	1,269		315,618	818	229	935,658
Percent	0.06	2.21	0.24	3.31	32.53	0.08		19.59	0.05	0.01	58.08
Mean Length	347	501	431	580	512	449		583	556	515	539
Std. Error	6	4	46	3	1		1				1
Sample Size	2	60	7	82	802	2		589	1	1	1,546
Both Sexes	1,623	65,304	28,302	97,474	849,506	1,720	263	565,677	818	229	1,610,916
Percent	0.10	4.05	1.76	6.05	52.73	0.11	0.02	35.12	0.05	0.01	100.00
Mean Length	334	510	387	591	522	439	537	595	556	515	548
Std. Error	4	3	10	2	1		1		1		1
Sample Size	5	116	63	159	1,303	3	1	1,105	1	1	2,757

^a An additional 50 and 600 sockeye salmon were counted in Shosky Creek and King Salmon River but were not sampled.

Table 26. Age composition of chum salmon commercial catch, Egegik District, 1989.

	Age Group			
	0.3	0.4	0.5	Total
All Periods Combined				
Both Sexes	44,039	57,802	27,524	129,365
Percent ^a	34.04	44.68	21.28	100.00
Sample Size	16	21	10	47

^a Based on a sample size of 47 and given these estimated age proportions, this sample would estimate the true age composition within 10 percentage points 50% of the time.

Table 27. Age composition of coho salmon commercial catch, Egegik District, 1989.

	Age Group			Total
	1.1	2.1	3.1	
All Periods Combined				
Both Sexes	14,591	33,673	842	49,106
Percent ^a	29.71	68.57	1.71	100.00
Sample Size	52	120	3	175

^a Based on a sample size of 175 and given these estimated age proportions, this sample would estimate the true age composition within 10 percentage points 95% of the time.

Table 28. Commercial salmon catch by period and species,
Ugashik District, 1989.

Period	Hours ^b	Opening		Effort ^a		Catch (number of fish)				
		Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total	
6/01	12			0	0	0	0	0	0	0
6/02	9			0	2	0	0	0	0	2
6/05	15			0	0	0	0	0	0	0
6/06	24			1	34	1	0	0	0	36
6/07	24			0	26	0	0	0	0	26
6/08	24			9	22	7	0	0	0	38
6/09	9			0	0	0	0	0	0	0
6/12	15			380	124	92	0	0	0	596
6/13	24	26	12	2,570	306	558	0	0	0	3,434
6/14	24			1,402	227	132	0	0	0	1,761
6/15	24			1,836	238	267	0	0	0	2,341
6/16	9			965	51	134	0	0	0	1,150
6/19	15			7,802	37	685	0	0	0	8,524
6/20	24	131	29	24,305	264	1,903	0	0	0	26,472
6/21	24			13,498	165	1,546	0	0	0	15,209
6/22	24			13,688	106	1,558	0	0	0	15,352
6/23	9			10,461	102	1,119	0	0	0	11,682
7/01	12			12,323	49	352	0	0	0	12,724
7/03 ^c	0			1,582	0	19	0	0	0	1,601
7/04	13	20	69	57,692	8	649	0	0	0	58,349
7/05	24			120,633	14	2,073	0	0	0	122,720
7/06	24	49	36	184,524	12	4,622	0	0	0	189,158
7/07	24			337,149	20	5,386	0	0	0	342,555
7/08	24	155	55	352,219	31	8,216	0	0	0	360,466
7/09	15	162	52	212,121	32	5,639	0	0	0	217,792
7/11	13	352	69	385,197	33	7,116	0	0	0	392,346
7/12	7	320	76	59,177	20	640	0	0	0	59,837
7/13	24			358,978	26	8,039	0	0	0	367,043
7/14	12			64,743	6	1,811	0	0	0	66,560
7/15	24			254,421	33	5,855	1	0	0	260,310
7/16	24			203,687	20	4,959	0	0	0	208,666
7/17	24			138,572	8	4,006	0	0	0	142,586
7/18	24			115,569	23	3,490	0	0	0	119,082
7/19	24			65,972	10	2,591	0	0	0	68,573
7/20	24			58,403	9	2,780	0	0	0	61,192
7/21	24			33,355	12	1,762	0	0	0	35,129
7/22	24			15,410	3	684	0	0	0	16,097
7/23	24			15,141	8	666	0	7	0	15,822
7/24	24			17,229	10	825	0	23	0	18,087
7/25	24			14,472	9	706	0	6	0	15,193
7/26	24	40	56	8,552	9	652	0	53	0	9,266
7/27	24			5,800	4	466	1	69	0	6,340
7/28	9			1,938	0	163	1	54	0	2,156
7/31	15			2,890	3	473	0	331	0	3,897
8/01	24			2,663	6	318	0	322	0	3,309
8/02	24			3,151	4	278	0	615	0	4,048
8/03	24			1,818	1	277	0	352	0	2,448
8/04	9			326	1	28	0	90	0	445
8/07	15			354	1	39	0	514	0	908
8/08	24			355	0	81	1	336	0	773
8/09	24	4	17	433	0	117	8	825	0	1,383
8/10	24			229	1	133	0	598	0	961
8/11	9			191	1	114	0	239	0	545
8/14	15			75	0	64	0	1,622	0	1,761
8/15	24			148	0	23	8	1,851	0	2,030
8/16	24			68	0	69	0	1,196	0	1,333
8/17	24			128	3	136	0	1,629	0	1,896
8/18	9			75	1	67	1	1,895	0	2,039

-Continued-

Table 28. (p 2 of 2).

Opening Period	Hours ^b	Effort ^a		Catch (number of fish)					Total
		Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	
8/21	15			96	0	30	6	2,549	2,681
8/22	24	4	25	72	1	13	0	2,022	2,108
8/23	24			54	3	20	0	2,530	2,607
8/24	24			47	1	15	0	1,661	1,724
8/25	9			47	0	2	1	2,444	2,494
8/28	15			14	0	0	3	3,067	3,084
8/29	24			29	0	0	1	1,676	1,706
8/30	24			14	0	2	0	1,730	1,746
8/31	24			4	0	0	0	1,366	1,370
9/01	9			5	0	0	0	361	366
9/04	15			0	0	0	0	0	0
9/05	24			0	0	0	0	0	0
9/06	24			0	0	0	0	161	161
9/07	24			0	0	0	0	90	90
9/08	9			0	0	0	0	70	70
Total	1,398 h			3,185,062	2,140	84,468	32	32,354	3,304,056
Percent of District Catch				96.4	0.0 ^d	2.6	0.0 ^d	1.0	100.0

^a Fishing effort represents number of drift boats and set nets estimated from aerial surveys on open fishing periods. Blanks indicate no aerial surveys were conducted.

^b See Table 2 for emergency fishing periods.

^c ADF&G test fishing catches

^d Represented < 0.1% of total

Table 29. Age and sex composition of sockeye salmon catch and escapement, Ugashik District, 1989.

	Age Group												
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	Total	
<u>CATCH</u>													
Males	359		2,661	136,597		208,381	1,269,012	845	132,588				1,750,443
Percent	0.01		0.05	2.81		4.28	26.08	0.02	2.72				35.97
Females	1,937		1,410	97,192		143,887	1,085,539	2,371	99,722	883	1,678		1,434,619
Percent	0.04		0.03	2.00		2.96	22.31	0.05	2.05	0.02	0.03		29.48
Both Sexes	2,296		4,071	233,789		352,268	2,354,551	3,216	232,310	883	1,678		3,185,062
Percent	0.05		0.08	4.80		7.24	48.38	0.07	4.77	0.02	0.03		65.45
<u>ESCAPEMENT^a</u>													
Males	1,661	496	767	110,793	1,108	85,380	517,750		35,340				753,295
Percent	0.03	0.01	0.02	2.28	0.02	1.75	10.64		0.73				15.48
Females	496		1,363	147,427	587	112,275	631,449		34,069		341		928,007
Percent	0.01		0.03	3.03	0.01	2.31	12.98		0.70		0.01		19.07
Both Sexes	2,157	496	2,130	258,220	1,695	197,655	1,149,199		69,409		341		1,681,302
Percent	0.04	0.01	0.04	5.31	0.03	4.06	23.62		1.43		0.01		34.55
<u>CATCH AND ESCAPEMENT</u>													
Males	2,020	496	3,428	247,390	1,108	293,761	1,786,762	845	167,928				2,503,738
Percent	0.04	0.01	0.07	5.08	0.02	6.04	36.72	0.02	3.45				51.45
Females	2,433		2,773	244,619	587	256,162	1,716,988	2,371	133,791	883	2,019		2,362,626
Percent	0.05		0.06	5.03	0.01	5.26	35.28	0.05	2.75	0.02	0.04		48.55
Both Sexes	4,453	496	6,201	492,009	1,695	549,923	3,503,750	3,216	301,719	883	2,019		4,866,364
Percent	0.09	0.01	0.13	10.11	0.03	11.30	72.00	0.07	6.20	0.02	0.04		100.00

^a An additional 6,505 and 25,480 sockeye salmon were counted in Dog Salmon and King Salmon River tributaries but were not sampled.

Table 30. Age, sex, and size composition of sockeye salmon commercial catch, Ugashik District, 1989.

	Age Group									
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
Sample Period 1: 6 - 23 June										
Males	456	3,192	8,057	24,170	152	20,521				56,548
Percent	0.59	4.15	10.47	31.42	0.20	26.68				73.52
Mean Length	584	518	594	541	657	606				572
Std. Error	6	5	4	2		2				1
Sample Size	3	21	53	159	1	135				372
Mean Weight	3.04	2.14	3.11	2.58	4.21	3.51				2.98
Std. Error	0.37	0.20	0.21	0.06		0.08				0.05
Sample Size	2	2	11	39	1	40				95
Females	456	608	1,976	7,448		9,881				20,369
Percent	0.59	0.79	2.57	9.68		12.85				26.48
Mean Length	567	547	578	519		581				557
Std. Error	2	12	5	4		2				2
Sample Size	3	4	13	49		65				134
Mean Weight		2.37	3.31	2.07		2.85				2.59
Std. Error		0.21		0.08		0.07				0.05
Sample Size		2	1	15		19				37
Both Sexes	912	3,800	10,033	31,618	152	30,402				76,917
Percent	1.19	4.94	13.04	41.11	0.20	39.53				100.00
Mean Length	576	523	591	536	657	598				568
Std. Error	3	5	3	2		2				1
Sample Size	6	25	66	208	1	200				506
Mean Weight	3.04	2.18	3.15	2.46	4.21	3.30				2.88
Std. Error	0.37	0.17	0.21	0.05		0.06				0.04
Sample Size	2	4	12	54	1	59				132

-Continued-

Table 30. (p 2 of 8).

	Age Group									
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
Sample Period 2: 1 - 5 July										
Males	359	359	17,965	16,169	99,170	9,342				143,364
Percent	0.19	0.19	9.35	8.41	51.59	4.86				74.58
Mean Length	514	496	528	579	540	576				545
Std. Error			4	6	1	5				1
Sample Size	1	1	50	45	276	26				399
Mean Weight			2.21	3.38	2.46	2.96				2.57
Std. Error			0.15	0.13	0.04	0.22				0.04
Sample Size			8	14	49	6				77
Females			6,468	5,749	31,619	5,030				48,866
Percent			3.36	2.99	16.45	2.62				25.42
Mean Length			512	570	518	558				527
Std. Error			3	7	2	7				2
Sample Size			18	16	88	14				136
Mean Weight			1.94	2.75	2.00					2.09
Std. Error			0.10	0.06	0.06					0.05
Sample Size			3	3	8					14
Both Sexes	359	359	24,433	21,918	130,789	14,372				192,230
Percent	0.19	0.19	12.71	11.40	68.04	7.48				100.00
Mean Length	514	496	524	577	535	569				541
Std. Error			3	5	1	4				1
Sample Size	1	1	68	61	364	40				535
Mean Weight			2.14	3.21	2.35	2.96				2.45
Std. Error			0.12	0.09	0.03	0.22				0.03
Sample Size			11	17	57	6				91

-Continued-

Table 30. (p 3 of 8).

	Age Group									
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
Sample Period 3: 6 - 7 July										
Males	954	34,333	44,824	217,443		22,889				320,443
Percent	0.18	6.58	8.59	41.68		4.39				61.43
Mean Length	635	531	597	541		603				553
Std. Error		3	4	1		5				1
Sample Size	1	36	47	228		24				336
Mean Weight		2.73	4.27	2.90		3.73				3.13
Std. Error		0.08	0.23	0.06		0.31				0.06
Sample Size		3	6	42		3				54
Females	954	19,074	27,657	138,286		15,259				201,230
Percent	0.18	3.66	5.30	26.51		2.93				38.57
Mean Length	542	511	572	522		569				531
Std. Error		5	4	2		3				1
Sample Size	1	20	29	145		16				211
Mean Weight		2.25	3.08	2.38		3.28				2.53
Std. Error			0.12	0.04						0.03
Sample Size		1	5	30		1				37
Both Sexes	1,908	53,407	72,481	355,729		38,148				521,673
Percent	0.37	10.24	13.89	68.19		7.31				100.00
Mean Length	589	524	587	534		589				544
Std. Error		3	3	1		3				1
Sample Size	2	56	76	373		40				547
Mean Weight		2.56	3.82	2.70		3.55				2.90
Std. Error		0.08	0.15	0.04		0.31				0.04
Sample Size		4	11	72		4				91

-Continued-

Table 30. (p 4 of 8).

	Age Group									
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
Sample Period 4: 8 - 9 July										
Males	892	28,529	31,203	253,195		21,397				335,216
Percent	0.16	5.06	5.53	44.87		3.79				59.40
Mean Length	614	524	588	534		585				542
Std. Error		6	6	1		7				1
Sample Size	1	32	35	284		24				376
Mean Weight		2.38	3.26	2.48		2.71				2.56
Std. Error		0.14	0.27	0.08		0.13				0.07
Sample Size		5	5	36		3				49
Females		14,265	21,397	176,523		16,939				229,124
Percent		2.53	3.79	31.28		3.00				40.60
Mean Length		511	569	518		562				525
Std. Error		6	5	2		6				2
Sample Size		16	24	198		19				257
Mean Weight		2.17	2.89	2.16		2.45				2.25
Std. Error				0.04		0.38				0.04
Sample Size		1	1	20		3				25
Both Sexes	892	42,794	52,600	429,718		38,336				564,340
Percent	0.16	7.58	9.32	76.15		6.79				100.00
Mean Length	614	520	580	528		575				535
Std. Error		4	4	1		5				1
Sample Size	1	48	59	482		43				633
Mean Weight		2.31	3.11	2.35		2.60				2.43
Std. Error		0.14	0.27	0.05		0.18				0.04
Sample Size		6	6	56		6				74

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Table 30. (p 5 of 8).

	Age Group									
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
Sample Period 5: 11 - 12 July										
Males	22,258	15,104		187,607		18,284				243,253
Percent	5.01	3.40		42.22		4.11				54.74
Mean Length	528	586		538		590				544
Std. Error	4	8		2		6				1
Sample Size	28	19		236		23				306
Mean Weight	2.57			2.59		4.06				2.71
Std. Error	0.05			0.09						0.08
Sample Size	4			21		1				26
Females	15,899	26,233		143,090		795	14,309		795	201,121
Percent	3.58	5.90		32.20		0.18	3.22		0.18	45.26
Mean Length	512	569		521		572	569		553	530
Std. Error	4	5		2			4			1
Sample Size	20	33		180		1	18		1	253
Mean Weight	2.95			2.16						2.28
Std. Error	0.29			0.09						0.09
Sample Size		5		13						18
Both Sexes	38,157	41,337		330,697		795	32,593		795	444,374
Percent	8.59	9.30		74.42		0.18	7.33		0.18	100.00
Mean Length	521	575		530		572	581		553	538
Std. Error	3	4		1			4			1
Sample Size	48	52		416		1	41		1	559
Mean Weight	2.57	2.95		2.40			4.06			2.53
Std. Error	0.05	0.29		0.06						0.06
Sample Size		4		34			1			44

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Table 30. (p 6 of 8).

	Age Group									
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
Sample Period 6: 13 - 14 July										
Males	11,096	23,579	162,969	693	13,870					212,207
Percent	2.62	5.56	38.46	0.16	3.27					50.08
Mean Length	512	593	534	658	599					544
Std. Error	5	6	2		7					1
Sample Size	16	34	235	1	20					306
Females	12,483	18,724	171,986	693	7,628					211,514
Percent	2.95	4.42	40.59	0.16	1.80					49.92
Mean Length	500	572	512	595	572					519
Std. Error	9	4	1		7					1
Sample Size	18	27	248	1	11					305
Both Sexes	23,579	42,303	334,955	1,386	21,498					423,721
Percent	5.56	9.98	79.05	0.33	5.07					100.00
Mean Length	506	584	523	627	590					531
Std. Error	5	4	1		5					1
Sample Size	34	61	483	2	31					611
Sample Period 7: 15 - 16 July										
Males	11,475	22,950	169,473		18,536					222,434
Percent	2.50	5.01	36.99		4.05					48.55
Mean Length	518	597	539		576					547
Std. Error	6	4	2		8					1
Sample Size	13	26	192		21					252
Females	16,771	24,715	178,299	883	13,240	883	883			235,674
Percent	3.66	5.40	38.92	0.19	2.89	0.19	0.19			51.45
Mean Length	509	562	513	579	569	500	593			521
Std. Error	4	4	1		6					1
Sample Size	19	28	202	1	15	1	1			267
Both Sexes	28,246	47,665	347,772	883	31,776	883	883			458,108
Percent	6.17	10.40	75.91	0.19	6.94	0.19	0.19			100.00
Mean Length	513	579	526	579	573	500	593			534
Std. Error	3	3	1		5					1
Sample Size	32	54	394	1	36	1	1			519

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Table 30. (p 7 of 8).

	Age Group									
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
Sample Period 8: 17 July - 1 September										
Males		7,749		46,495		154,985		7,749		216,978
Percent		1.54		9.23		30.77		1.54		43.08
Mean Length		509		592		532		611		547
Std. Error		25		11		3		8		3
Sample Size		4		24		80		4		112
Mean Weight				3.74		2.51				2.79
Std. Error				0.17		0.09				0.08
Sample Size				8		17				25
Females	1,937		11,624		17,436		238,288		17,436	286,721
Percent	0.38		2.31		3.46		47.31		3.46	56.92
Mean Length	470		516		567		513		564	519
Std. Error			6		7		2		10	2
Sample Size	1		6		9		123		9	148
Mean Weight			2.04		3.20		1.99		3.17	2.14
Std. Error			0.09				0.05			0.04
Sample Size			2		1		16		1	20
Both Sexes	1,937		19,373		63,931		393,273		25,185	503,699
Percent	0.38		3.85		12.69		78.08		5.00	100.00
Mean Length	470		513		585		520		578	531
Std. Error			11		9		2		7	2
Sample Size	1		10		33		203		13	260
Mean Weight			2.04		3.59		2.19		3.17	2.41
Std. Error			0.09		0.17		0.05			0.04
Sample Size			2		9		33		1	45

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Table 30. (p 8 of 8).

	Age Group									
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
All Periods Combined										
Males	359	2,661	136,597	208,381	1,269,012	845	132,588			1,750,443
Percent	0.01	0.08	4.29	6.54	39.84	0.03	4.16			54.96
Mean Length	514	600	524	592	537	658	593			547
Std. Error		6	2	3	1		2			1
Sample Size	1	6	200	283	1,690	2	277			2,459
Mean Weight		3.04	2.50	3.54	2.49	4.21	3.43			2.66
Std. Error		0.37	0.05	0.11	0.04		0.11			0.02
Sample Size		2	22	44	204	1	53			326
Females	1,937	1,410	97,192	143,887	1,085,539	2,371	99,722	883	1,678	1,434,619
Percent	0.06	0.04	3.05	4.52	34.08	0.07	3.13	0.03	0.05	45.04
Mean Length	470	550	510	569	516	581	568	500	574	525
Std. Error		2	2	2	1		2			1
Sample Size	1	4	121	179	1,233	3	167	1	2	1,711
Mean Weight			2.14	2.99	2.15		2.94			2.27
Std. Error			0.07	0.14	0.03		0.24			0.02
Sample Size			9	16	102		24			151
Both Sexes	2,296	4,071	233,789	352,268	2,354,551	3,216	232,310	883	1,678	3,185,062
Percent	0.07	0.13	7.34	11.06	73.92	0.10	7.29	0.03	0.05	100.00
Mean Length	477	583	519	582	527	601	582	500	574	537
Std. Error		3	2	2	0		2			0
Sample Size	2	10	321	462	2,923	5	444	1	2	4,170
Mean Weight		3.04	2.38	3.31	2.33	4.21	3.24			2.49
Std. Error		0.37	0.05	0.09	0.02		0.10			0.01
Sample Size		2	31	60	306	1	77			477

Table 31. Daily sockeye salmon escapement counts, Ugashik River, 1989.

Date	Daily Count ^a	Cumulative Count	Daily Percent of Total	Cumulative Percent
July 4	210	210	0.01	0.01
5	66,222	66,432	3.94	3.95
6	80,304	146,736	4.78	8.73
7	101,388	248,124	6.03	14.76
8	67,650	315,774	4.02	18.78
9	66,516	382,290	3.96	22.74
10	58,008	440,298	3.45	26.19
11	101,514	541,812	6.04	32.23
12	413,310	955,122	24.58	56.81
13	220,854	1,175,976	13.14	69.94
14	63,300	1,239,276	3.76	73.71
15	66,618	1,305,894	3.96	77.67
16	54,420	1,360,314	3.24	80.91
17	58,482	1,418,796	3.48	84.39
18	68,544	1,487,340	4.08	88.46
19	47,448	1,534,788	2.82	91.29
20	30,702	1,565,490	1.83	93.11
21	20,934	1,586,424	1.25	94.36
22	15,210	1,601,634	0.90	95.26
23	13,212	1,614,846	0.79	96.05
24	15,138	1,629,984	0.90	96.95
25	20,838	1,650,822	1.24	98.19
26	18,528	1,669,350	1.10	99.29
27	7,578	1,676,928	0.45	99.74
28	2,004	1,678,932	0.12	99.86
29	2,370	1,681,302	0.14	100.00

^a An additional 6,505 and 25,480 sockeye salmon were counted in Dog and King Salmon Rivers, bringing the Ugashik District escapement total to 1,713,287.

Table 32. Age, sex, and size composition of sockeye salmon escapement, Ugashik River, 1989.

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	2.3	2.4	Total ^a
Sample Period 1: 4 - 8 July										
Males			24,065			19,369	123,257	8,804		175,495
Percent			7.62			6.13	39.03	2.79		55.58
Mean Length			526			596	541	603		548
Std. Error			3			4	2	8		1
Sample Size			41			33	210	15		299
Females			18,195		587	33,456	75,715	12,326		140,279
Percent			5.76		0.19	10.59	23.98	3.90		44.42
Mean Length			496		357	578	516	584		533
Std. Error			4			2	2	4		1
Sample Size			31		1	57	129	21		239
Both Sexes			42,260		587	52,825	198,972	21,130		315,774
Percent			13.38		0.19	16.73	63.01	6.69		100.00
Mean Length			513		357	585	531	592		541
Std. Error			2			2	1	4		1
Sample Size			72		1	90	339	36		538
Sample Period 2: 9 - 11 July										
Males			6,361			11,026	79,729	9,330		106,446
Percent			2.81			4.88	35.27	4.13		47.09
Mean Length			510			608	537	598		548
Std. Error			10			5	2	5		2
Sample Size			15			26	188	22		251
Females			7,634			13,147	85,664	13,147		119,592
Percent			3.38			5.82	37.90	5.82		52.91
Mean Length			509			573	507	579		523
Std. Error			5			4	2	4		1
Sample Size			18			31	202	31		282
Both Sexes			13,995			24,173	165,393	22,477		226,038
Percent			6.19			10.69	73.17	9.94		100.00
Mean Length			509			589	521	587		534
Std. Error			5			3	1	3		1
Sample Size			33			57	390	53		533

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Table 32. (p 2 of 4).

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	2.3	2.4	Total ^a
Sample Period 3: 12 - 13 July										
Males			33,377		32,042	224,293	10,681			300,393
Percent			5.26		5.05	35.37	1.68			47.37
Mean Length			514		616	541	615			548
Std. Error			8		4	2	10			2
Sample Size			25		24	168	8			225
Females			58,744		45,393	226,964	2,670			333,771
Percent			9.26		7.16	35.79	0.42			52.63
Mean Length			502		580	513	581			521
Std. Error			3		4	2	20			1
Sample Size			44		34	170	2			250
Both Sexes			92,121		77,435	451,257	13,351			634,164
Percent			14.53		12.21	71.16	2.11			100.00
Mean Length			506		595	527	608			534
Std. Error			4		3	1	9			1
Sample Size			69		58	338	10			475
Sample Period 4: 14 - 15 July										
Males	326	326		16,280		11,722	34,840	2,605		66,099
Percent	0.25	0.25		12.53		9.02	26.82	2.01		50.88
Mean Length	548	377		523		613	538	611		549
Std. Error				4		3	2	11		2
Sample Size	1	1		50		36	107	8		203
Females	326			15,955		9,768	34,514	3,256		63,819
Percent	0.25			12.28		7.52	26.57	2.51		49.12
Mean Length	411			499		581	512	568		522
Std. Error				3		4	2	13		2
Sample Size	1			49		30	106	10		196
Both Sexes	652	326		32,235		21,490	69,354	5,861		129,918
Percent	0.50	0.25		24.81		16.54	53.38	4.51		100.00
Mean Length	480	377		511		598	525	587		536
Std. Error				3		2	1	9		1
Sample Size	2	1		99		66	213	18		399

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Table 32. (p 3 of 4).

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	2.3	2.4	Total ^a
Sample Period 5: 16 - 18 July										
Males	682			15,007	341	5,457	34,789	2,046		58,322
Percent	0.38			8.27	0.19	3.01	19.17	1.13		32.14
Mean Length	423			513	394	606	526	627		532
Std. Error	23			6		6	3	9		3
Sample Size	2			44	1	16	102	6		171
Females				20,123		4,434	96,521	1,705	341	123,124
Percent				11.09		2.44	53.20	0.94	0.19	67.86
Mean Length				494		576	503	591	527	505
Std. Error				3		5	1	7		1
Sample Size				59		13	283	5	1	361
Both Sexes	682			35,130	341	9,891	131,310	3,751	341	181,446
Percent	0.38			19.36	0.19	5.45	72.37	2.07	0.19	100.00
Mean Length	423			502	394	593	509	611	527	514
Std. Error	23			3		4	1	6		1
Sample Size	2			103	1	29	385	11	1	532
Sample Period 6: 19 - 22 July										
Males	511	170	341	8,176	341	2,214	11,753	170		23,676
Percent	0.45	0.15	0.30	7.15	0.30	1.94	10.28	0.15		20.71
Mean Length	455	334	571	502	362	606	501	586		509
Std. Error	45		18	6	3	7	4			3
Sample Size	3	1	2	48	2	13	69	1		139
Females	170		511	14,989		2,385	71,882	681		90,618
Percent	0.15		0.45	13.11		2.09	62.89	0.60		79.29
Mean Length	452		576	489		566	497	581		498
Std. Error			15	2		7	1	11		1
Sample Size	1		3	88		14	422	4		532
Both Sexes	681	170	852	23,165	341	4,599	83,635	851		114,294
Percent	0.60	0.15	0.75	20.27	0.30	4.02	73.18	0.74		100.00
Mean Length	454	334	574	494	362	585	498	582		501
Std. Error	45		11	2	3	5	1	11		1
Sample Size	4	1	5	136	2	27	491	5		671

-Continued-

Table 32. (p 4 of 4).

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	2.3	2.4	Total ^a
Sample Period 7: 23 - 29 July										
Males	142		426	7,527	426	3,550	9,089	1,704		22,864
Percent	0.18		0.53	9.45	0.53	4.46	11.41	2.14		28.70
Mean Length	436		582	508	393	601	517	602		532
Std. Error			10	6	41	3	4	6		3
Sample Size	1		3	53	3	25	64	12		161
Females			852	11,787		3,692	40,189	284		56,804
Percent			1.07	14.80		4.63	50.45	0.36		71.30
Mean Length			547	495		571	496	587		502
Std. Error			11	2		3	1	1		1
Sample Size			6	83		26	283	2		400
Both Sexes	142		1,278	19,314	426	7,242	49,278	1,988		79,668
Percent	0.18		1.60	24.24	0.53	9.09	61.85	2.50		100.00
Mean Length	436		558	500	393	586	500	599		511
Std. Error			8	3	41	2	1	5		1
Sample Size	1		9	136	3	51	347	14		561
All Periods Combined										
Males	1,661	496	767	110,793	1,108	85,380	517,750	35,340		753,295
Percent	0.10	0.03	0.05	6.59	0.07	5.08	30.79	2.10		44.80
Mean Length	458	362	577	516	384	608	538	607		545
Std. Error	24		10	3	23	2	1	4		1
Sample Size	7	2	5	276	6	173	908	72		1,449
Females	496		1,363	147,427	587	112,275	631,449	34,069	341	928,007
Percent	0.03		0.08	8.77	0.03	6.68	37.56	2.03	0.02	55.20
Mean Length	425		558	498	357	578	508	581	527	518
Std. Error			9	2		2	1	3		1
Sample Size	2		9	372	1	205	1,595	75	1	2,260
Both Sexes	2,157	496	2,130	258,220	1,695	197,655	1,149,199	69,409	341	1,681,302
Percent	0.13	0.03	0.13	15.36	0.10	11.76	68.35	4.13	0.02	100.00
Mean Length	451	362	565	506	374	591	521	594	527	530
Std. Error	24		7	1	23	1	1	2		1
Sample Size	9	2	14	648	7	378	2,503	147	1	3,709

^a An additional 6,505 and 25,480 sockeye salmon were counted in Dog Salmon and King Salmon River tributaries but were not sampled.

Table 33. Age composition of chinook salmon commercial catch,
Ugashik District, 1989.

	Age Group				
	1.2	1.3	1.4	1.5	Total
All Periods Combined					
Both Sexes	123	172	1,402	443	2,140
Percent ^a	5.75	8.05	65.52	20.69	100.00
Sample Size	5	7	57	18	87

^a Based on a sample size of 87 and given these estimated age proportions, this sample would estimate the true age composition within 10 percentage points 80% of the time.

Table 34. Age, sex, and size composition of chum salmon commercial catch, Ugashik District, 1989.

	Age Group			
	0.3	0.4	0.5	Total
All Periods Combined				
Males	9,096	9,097		18,193
Percent ^a	10.77	10.77		21.54
Mean Length	563	622		593
Std. Error	11	14		9
Sample Size	7	7		14
Females	44,183	20,792	1,300	66,275
Percent ^a	52.31	24.62	1.54	78.46
Mean Length	554	569	590	559
Std. Error	4	7		3
Sample Size	34	16	1	51
Both Sexes	53,279	29,889	1,300	84,468
Percent ^a	63.08	35.38	1.54	100.00
Mean Length	555	585	590	566
Std. Error	4	6		3
Sample Size	41	23	1	65

^a Based on a sample size of 65 and given these estimated age proportions, this sample size would estimate the true age composition within 10 percentage points 70% of the time.

Table 35. Commercial salmon catch by period and species,
Nushagak District, 1989.

Period	Hours ^b	Effort ^a		Catch (number of fish)					
		Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6/22 ^c	0			15	2	3	0	0	20
6/23 ^c	0			162	7	41	0	0	210
6/24 ^c	0			265	4	13	0	0	282
6/25 ^c	0			180	4	71	0	0	255
6/26-6/27	12	66	253	95,734	834	24,570	2	0	121,140
6/29	12	117	266	350,225	3,313	48,987	0	0	402,525
7/01	12	97	192	346,234	2,210	32,332	0	0	380,776
7/03	12			370,080	2,024	33,295	0	0	405,399
7/04	24			237,716	2,784	34,029	0	0	274,529
7/05	24			286,900	2,353	37,937	1	0	327,191
7/06	24			205,491	501	22,706	1	0	228,699
7/07	24			116,200	266	13,517	0	0	129,983
7/08	24			38,369	152	4,923	0	0	43,444
7/09	24			82,566	296	17,599	2	0	100,463
7/10	24			146,406	524	36,587	2	0	183,519
7/11	24			154,676	608	26,876	0	4	182,164
7/12	24			117,311	376	19,441	0	0	137,128
7/13	24			85,510	253	16,991	4	18	102,776
7/14	24			61,623	287	11,987	2	77	73,976
7/15	24			24,655	59	5,379	0	0	30,093
7/16	24			32,810	68	9,656	2	250	42,786
7/17	24			32,639	260	9,342	1	887	43,129
7/18	24			25,241	186	10,033	3	830	36,293
7/19	24			15,798	129	5,884	2	1,182	22,995
7/20	24			9,747	79	4,186	91	1,523	15,626
7/21	24			7,107	101	3,606	1	2,403	13,218
7/22	9			1,758	9	246	0	185	2,198
7/24	15			4,173	73	8,687	0	12,997	25,930
7/25	24			5,920	75	5,416	0	15,414	26,825
7/26	9			812	11	435	0	806	2,064
7/31	15			187	15	500	0	8,140	8,842
8/01	24			224	14	708	31	17,265	18,242
8/02	9			140	6	151	0	3,736	4,033
8/14	15			3	0	8	4	3,996	4,011
8/15	24			80	4	12	2	7,296	7,394
8/16	9			31	0	1	0	64	96
Total	681 h			2,856,988	17,887	446,155	151	77,073	3,398,254
Percent of District Catch				84.1	0.5	13.1	0.0 ^d	2.3	100.0

^a Fishing effort represents number of drift boats and number of set nets estimated from aerial surveys on open fishing periods. Blanks indicate no aerial surveys were conducted.

^b See Table 2 for emergency fishing periods.

^c ADF&G test fishing catches

^d Represented less than 0.1% of total

Table 36. Age and sex composition of sockeye salmon inshore run, Nushagak District, 1989.

	Age Group									
	0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
<u>CATCH</u>										
Males	11,162		103,618	356,741	12,160	573,634	19,468	3,510	16,538	1,096,831
Percent	0.22		2.06	7.11	0.24	11.43	0.39	0.07	0.33	21.86
Females	23,243		221,580	523,225	9,486	911,671	31,715	5,958	33,279	1,760,157
Percent	0.46		4.42	10.43	0.19	18.17	0.63	0.12	0.66	35.07
Both Sexes	34,405		325,198	879,966	21,646	1,485,305	51,183	9,468	49,817	2,856,988
Percent	0.69		6.48	17.53	0.43	29.60	1.02	0.19	0.99	56.93
<u>ESCAPEMENT^a</u>										
Males	34,264	893	83,165	319,361	4,806	514,267	18,959	6,091	28,104	1,009,910
Percent	0.68	0.02	1.66	6.36	0.10	10.25	0.38	0.12	0.56	20.12
Females	4,867	798	112,432	480,204	7,013	501,553	16,995	3,769	23,900	1,151,531
Percent	0.10	0.02	2.24	9.57	0.14	9.99	0.34	0.08	0.48	22.95
Both Sexes	39,131	1,691	195,597	799,565	11,819	1,015,820	35,954	9,860	52,004	2,161,441
Percent	0.78	0.03	3.90	15.93	0.24	20.24	0.72	0.20	1.04	43.07
<u>CATCH AND ESCAPEMENT</u>										
Males	45,426	893	186,783	676,102	16,966	1,087,901	38,427	9,601	44,642	2,106,741
Percent	0.91	0.02	3.72	13.47	0.34	21.68	0.77	0.19	0.89	41.98
Females	28,110	798	334,012	1,003,429	16,499	1,413,224	48,710	9,727	57,179	2,911,688
Percent	0.56	0.02	6.66	19.99	0.33	28.16	0.97	0.19	1.14	58.02
Both Sexes	73,536	1,691	520,795	1,679,531	33,465	2,501,125	87,137	19,328	101,821	5,018,429
Percent	1.47	0.03	10.38	33.47	0.67	49.84	1.74	0.39	2.03	100.00

^a An additional 28,060 sockeye salmon were counted in Snake River but were not sampled for age information.

Table 37. Age, sex, and size composition of sockeye salmon commercial catch,
Nushagak District, 1989.

	Age Group								
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total ^a
Sample Period 1: 22 - 28 June									
Males	1,400	7,875	175	30,625	175	175	1,050	41,475	
Percent	1.55	8.70	0.19	33.85	0.19	0.19	1.16	45.84	
Mean Length	593	529	595	589	530	572	599	577	
Std. Error	14	3		2			12	2	
Sample Size	8	45	1	175	1	1	6	237	
Mean Weight	4.12	2.48		3.56			3.79	3.38	
Std. Error	0.37	0.12		0.09			0.62	0.07	
Sample Size	3	14		46			2	65	
Females	175	2,625	5,950		38,850	700	700	49,000	
Percent	0.19	2.90	6.58		42.94	0.77	0.77	54.16	
Mean Length	490	566	509		565	522	564	558	
Std. Error	3	6		1	16		5	1	
Sample Size	1	15	34		222	4	4	280	
Mean Weight	2.08	2.96	2.28		3.01	1.98	2.91	2.90	
Std. Error	0.18	0.17		0.06				0.05	
Sample Size	1	4	7		51	1	1	65	
Both Sexes	175	4,025	13,825	175	69,475	875	175	1,750	90,475
Percent	0.19	4.45	15.28	0.19	76.79	0.97	0.19	1.93	100.00
Mean Length	490	575	520	595	576	524	572	585	567
Std. Error	5	3		1	16		7	1	
Sample Size	1	23	79	1	397	5	1	10	517
Mean Weight	2.08	3.36	2.39		3.25	1.98		3.44	3.12
Std. Error	0.17	0.10		0.05			0.62	0.04	
Sample Size	1	7	21		97	1		3	130

-Continued-

Table 37. (p 2 of 7).

	Age Group								
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total ^a
Sample Period 2: 29 - 30 June									
Males	2,931	25,643	38,098	733	81,324	1,465	733	150,927	
Percent	0.85	7.43	11.04	0.21	23.57	0.42	0.21	43.74	
Mean Length	489	559	509	637	580	558	615	557	
Std. Error	25	8	3		3	13		2	
Sample Size	4	35	52	1	111	2	1	206	
Mean Weight	3.04	2.32			3.27			2.98	
Std. Error	0.53	0.07			0.11			0.11	
Sample Size	5	12			34			51	
Females	733	44,692	20,514	2,198	121,621	733	1,465	2,198	194,154
Percent	0.21	12.95	5.94	0.64	35.24	0.21	0.42	0.64	56.26
Mean Length	490	552	500	589	557	525	576	575	550
Std. Error	2	4	15	2		15	14		1
Sample Size	1	61	28	3	166	1	2	3	265
Mean Weight	2.80	2.07		3.86	2.85	2.13	3.28		2.77
Std. Error	0.09	0.08			0.04		0.25		0.04
Sample Size	14	7	1		42	1	2		67
Both Sexes	3,664	70,335	58,612	2,931	202,945	2,198	1,465	2,931	345,081
Percent	1.06	20.38	16.98	0.85	58.81	0.64	0.42	0.85	100.00
Mean Length	489	554	506	601	566	547	576	585	553
Std. Error	25	3	2	15	1	13	15	14	1
Sample Size	5	96	80	4	277	3	2	4	471
Mean Weight	2.89	2.23		3.86	3.02	2.13	3.28		2.86
Std. Error	0.20	0.05			0.05		0.25		0.05
Sample Size	19	19		1	76	1	2		118

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Table 37. (p 3 of 7).

	Age Group								
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total ^a
Sample Period 3: 1 - 2 July									
Males	19,143	21,395	2,252	65,313	1,126	1,126	1,126	1,126	111,481
Percent	6.03	6.74	0.71	20.57	0.35	0.35	0.35	0.35	35.11
Mean Length	581	511	621	579	508	656	576	567	
Std. Error	10	4	29	4					3
Sample Size	17	19	2	58	1	1	1	1	99
Mean Weight	4.09	2.35		3.42					3.32
Std. Error	0.28	0.13		0.15					0.11
Sample Size	7	5		21					33
Females	2,252	46,169	20,269	1,126	131,751	2,252	2,252	2,252	206,071
Percent	0.71	14.54	6.38	0.35	41.49	0.71	0.71	0.71	64.89
Mean Length	484	550	495	588	553	534	553	546	
Std. Error	1	4	4		2	30	3	2	
Sample Size	2	41	18	1	117	2	2	2	183
Mean Weight	2.73	1.99		2.81			2.64	2.64	2.71
Std. Error	0.19	0.16		0.07					0.06
Sample Size	8	3		41			1	1	53
Both Sexes	2,252	65,312	41,664	3,378	197,064	3,378	1,126	3,378	317,552
Percent	0.71	20.57	13.12	1.06	62.06	1.06	0.35	1.06	100.00
Mean Length	484	559	504	610	562	525	656	561	553
Std. Error	1	4	3	29	2	30	3	2	
Sample Size	2	58	37	3	175	3	1	3	282
Mean Weight	3.13	2.17		3.01			2.64	2.64	2.92
Std. Error	0.16	0.10		0.07					0.06
Sample Size	15	8		62			1	1	86

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Table 37. (p 4 of 7).

	Age Group								
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total ^a
Sample Period 4: 3 July									
Males	638	9,575	45,319	3,192	70,851	638	638	3,830	134,681
Percent	0.19	2.78	13.15	0.93	20.56	0.19	0.19	1.11	39.07
Mean Length	530	569	519	631	585	525	632	607	563
Std. Error		13	3	7	3			5	2
Sample Size	1	15	71	5	111	1	1	6	211
Mean Weight		3.18	2.48	4.51	3.52	2.48		4.03	3.18
Std. Error		0.32	0.09		0.10			0.03	0.07
Sample Size		6	24	1	41	1		3	76
Females	3,192	27,447	43,404	638	121,915	1,277	2,553	9,575	210,001
Percent	0.93	7.96	12.59	0.19	35.37	0.37	0.74	2.78	60.93
Mean Length	485	552	501	570	555	490	584	565	543
Std. Error	36	3	3		2		7	6	1
Sample Size	5	43	68	1	191	2	4	15	329
Mean Weight	2.26	2.79	2.14	3.33	2.82	1.81		2.89	2.66
Std. Error	0.42	0.14	0.12		0.05			0.19	0.04
Sample Size	4	10	25	1	67	1		5	113
Both Sexes	3,830	37,022	88,723	3,830	192,766	1,915	3,191	13,405	344,682
Percent	1.11	10.74	25.74	1.11	55.93	0.56	0.93	3.89	100.00
Mean Length	492	556	510	621	566	502	593	577	551
Std. Error	36	4	2	7	1		7	4	1
Sample Size	6	58	139	6	302	3	5	21	540
Mean Weight	2.26	2.89	2.31	4.31	3.08	2.03		3.22	2.86
Std. Error	0.42	0.13	0.08		0.05			0.14	0.04
Sample Size	4	16	49	2	108	2		8	189

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Table 37. (p 5 of 7).

	Age Group								
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total ^a
Sample Period 5: 4 - 8 July									
Males	1,488	26,776	117,517	4,463	181,481	4,463		2,975	339,163
Percent	0.18	3.31	14.52	0.55	22.43	0.55		0.37	41.91
Mean Length	490	580	520	630	582	537		593	560
Std. Error		9	3	10	3	16		27	2
Sample Size	1	18	79	3	122	3		2	228
Mean Weight		3.74	2.52		3.72	2.26		3.78	3.28
Std. Error		0.26	0.08		0.09			0.66	0.06
Sample Size		4	30		32	1		2	69
Females	2,975	66,940	83,303	1,488	297,512	8,925	1,488	7,438	470,069
Percent	0.37	8.27	10.29	0.18	36.76	1.10	0.18	0.92	58.09
Mean Length	490	547	504	535	557	519	560	551	545
Std. Error	60	3	3		2	10		8	1
Sample Size	2	45	56	1	200	6	1	5	316
Mean Weight	1.36	2.89	2.21		2.87	2.83	2.81	2.68	2.74
Std. Error		0.12	0.11		0.06	0.03		0.04	0.04
Sample Size	1	16	14		57	2	1	2	93
Both Sexes	4,463	93,716	200,820	5,951	478,993	13,388	1,488	10,413	809,232
Percent	0.55	11.58	24.82	0.74	59.19	1.65	0.18	1.29	100.00
Mean Length	490	556	513	606	566	525	560	563	551
Std. Error	60	3	2	10	2	8		10	1
Sample Size	3	63	135	4	322	9	1	7	544
Mean Weight	1.36	3.13	2.39		3.19	2.64	2.81	2.99	2.97
Std. Error		0.11	0.07		0.05	0.03		0.19	0.04
Sample Size	1	20	44		89	3	1	4	162

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Table 37. (p 6 of 7).

	Age Group								
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total ^a
Sample Period 6: 9 July - 16 August									
Males	5,381	20,178	88,784	1,345	108,962	1,345	1,345		227,340
Percent	0.75	2.80	12.34	0.19	15.14	0.19	0.19		31.59
Mean Length	426	552	511	605	564	584	600		540
Std. Error	13	16	5		5				3
Sample Size	4	15	66	1	81	1	1		169
Mean Weight		3.28	2.38		3.11	2.30			2.83
Std. Error		0.45	0.10		0.13				0.09
Sample Size		5	19		34		1		59
Females	12,107	29,595	293,256	4,036	150,663	2,690			492,347
Percent	1.68	4.11	40.75	0.56	20.93	0.37			68.41
Mean Length	452	542	488	569	534	544			505
Std. Error	18	7	2	35	4	48			2
Sample Size	9	22	218	3	112	2			366
Mean Weight	1.83	2.82	1.83	2.76	2.73	1.88			2.17
Std. Error	0.39	0.17	0.05	1.00	0.12				0.05
Sample Size	3	9	51	2	41		1		107
Both Sexes	17,488	49,773	382,040	5,381	259,625	4,035	1,345		719,687
Percent	2.43	6.92	53.08	0.75	36.07	0.56	0.19		100.00
Mean Length	444	546	493	578	547	557	600		516
Std. Error	13	8	2	35	3	48			2
Sample Size	13	37	284	4	193	3	1		535
Mean Weight	1.83	3.01	1.96	2.76	2.89	2.02			2.37
Std. Error	.39	.21	.04	1.00	.09				.04
Sample Size	3	14	70	2	75		2		166

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Table 37. (p 7 of 7).

	Age Group								
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total ^a
All Periods Combined									
Males	10,438	102,715	318,988	12,160	538,556	9,212	3,284	9,714	1,005,067
Percent	0.40	3.91	12.14	0.46	20.50	0.35	0.13	0.37	38.26
Mean Length	459	568	516	626	579	542	624	599	557
Std. Error	12	5	2	8	2	12		11	1
Sample Size	10	108	332	13	658	9	4	16	1,150
Mean Weight		3.49	2.44	4.51	3.46	2.29		3.90	3.13
Std. Error		0.18	0.04		0.05			0.26	0.04
Sample Size		30	104		208	3		7	353
Females	21,434	217,468	466,696	9,486	862,312	16,577	5,506	22,163	1,621,642
Percent	0.82	8.28	17.77	0.36	32.83	0.63	0.21	0.84	61.74
Mean Length	467	549	493	571	552	523	575	560	534
Std. Error	15	2	1	24	1	12	7	4	1
Sample Size	20	227	422	9	1,008	17	7	29	1,739
Mean Weight	1.83	2.82	1.95	3.16	2.83	2.48	3.04	2.78	2.56
Std. Error	0.32	0.06	0.04	1.00	0.03	0.03	0.25	0.11	0.02
Sample Size	9	61	107	4	299	6	3	9	498
Both Sexes	31,872	320,183	785,684	21,646	1,400,868	25,789	8,790	31,877	2,626,709
Percent	1.21	12.19	29.91	0.82	53.33	0.98	0.33	1.21	100.00
Mean Length	465	555	502	602	562	530	593	572	543
Std. Error	11	2	1	10	1	9	7	4	1
Sample Size	30	335	754	22	1,666	26	11	45	2,889
Mean Weight	1.83	3.03	2.15	3.59	3.07	2.42	3.04	3.10	2.78
Std. Error	0.32	0.07	0.03	1.00	0.03	0.03	0.25	0.11	0.02
Sample Size	9	91	211	5	507	9	3	16	851

^a Does not include age, weight, length, or catch data for 230,279 sockeye salmon harvested by set nets in Igushik Section.

Table 38. Commercial set net sockeye salmon catches by period, Clark's Point, Ekuk, and Igushik Beaches, 1989.

Period	Hours ^a	Clark's Point Beach ^b	Ekuk Beach ^c	Igushik Beach ^d
June 26-27	12	13,266	12,340	5,881
29	12	6,384	39,786	5,144
July 1	12	5,793	32,137	28,682
3	12	15,617	82,017	25,398
4	24	5,110	17,309	24,832
5	24	3,803	45,336	14,411
6	24	8,074	51,392	8,413
7	24	4,121	14,193	19,381
8	24	2,201	4,207	8,407
9	24	1,641	5,904	7,590
10	24	5,295	14,471	10,985
11	24	3,011	18,302	14,212
12	24	2,709	18,164	12,581
13	24	2,275	11,038	10,438
14	24	2,211	9,490	8,031
15	24	560	3,057	6,348
16	24	760	7,208	4,674
17	24	634	6,454	4,430
18	24	339	4,577	3,285
19	24	214	1,692	3,060
20	24	141	1,806	1,828
21	24		2,678	1,428
22	9		530	554
24	15	13	285	233
25	24	42	971	47
26	9		753	
31	15	23		
Aug. 1	24	10	28	3
2	9	6	104	
14	15	2		
15	24		59	3
16	9		31	
Totals	633 h	84,255	406,319	230,279

^a See Table 2 for emergency order fishing periods.

^b Approximate fishing effort was 22 set nets. Catch of other species included 112 chinook, 10,038 chum, and 58 coho.

^c Approximate fishing effort was 82 set nets. Catch of other species included 622 chinook, 27,227 chum, 13 pink, and 1,155 coho.

^d Approximate fishing effort was 65 set nets. Catch of other species included 900 chinook, 2,839 chum, 6 pink, and 182 coho.

Table 39. Age, sex, and size composition of sockeye salmon commercial catch, Igushik Beach set net fishery, 1989.

	Age Group							
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	Total
Sample Period 1: 27 June - 5 July								
Males	903	12,422	18,070	8,809	226	4,291	44,721	
Percent	0.87	11.90	17.32	8.44	0.22	4.11	42.86	
Mean Length	587	519	582	536	628	596	557	
Std. Error	10	3	4	4		4	2	
Sample Size	4	55	80	39	1	19	198	
Mean Weight	3.79	2.26	3.68	2.66		3.80	3.10	
Std. Error	0.08	0.07	0.13	0.11		0.26	0.07	
Sample Size	2	22	22	11		4	61	
Females	3,388	9,486	26,199	11,519	452	8,583	59,627	
Percent	3.25	9.09	25.11	11.04	0.43	8.23	57.14	
Mean Length	551	511	560	517	555	577	546	
Std. Error	5	4	2	3	10	3	1	
Sample Size	15	42	116	51	2	38	264	
Mean Weight	2.62	2.11	2.91	2.20	3.12	3.04	2.65	
Std. Error	0.26	0.09	0.06	0.08		0.06	0.04	
Sample Size	2	10	45	21	1	5	84	
Both Sexes	4,291	21,908	44,269	20,328	678	12,874	104,348	
Percent	4.11	21.00	42.42	19.48	0.65	12.34	100.00	
Mean Length	558	516	569	525	579	583	551	
Std. Error	5	2	2	2	10	2	1	
Sample Size	19	97	196	90	3	57	462	
Mean Weight	2.87	2.20	3.22	2.40	3.12	3.29	2.84	
Std. Error	0.21	0.05	0.07	0.07		0.10	0.04	
Sample Size	4	32	67	32	1	9	145	
Sample Period 2: 6 July - 15 August								
Males	724		25,331	17,008	1,447		2,533	47,043
Percent	0.57		20.11	13.51	1.15		2.01	37.36
Mean Length	428		519	586	533		604	547
Std. Error	1		3	5	5		8	3
Sample Size	2		70	47	4		7	130
Mean Weight			2.37	3.57	2.76		4.01	2.91
Std. Error			0.08	0.21			0.30	0.09
Sample Size			23	13	1		4	41
Females	1,809	724	47,043	23,160	3,619		2,533	78,888
Percent	1.44	0.57	37.36	18.39	2.87		2.01	62.64
Mean Length	435	552	488	558	500		573	511
Std. Error	25	4	2	3	8		4	2
Sample Size	5	2	130	64	10		7	218
Mean Weight			2.04	2.78	1.52		3.13	2.28
Std. Error			0.08	0.11			0.20	0.06
Sample Size			25	15	1		5	46
Both Sexes	2,533	724	72,374	40,168	5,066		5,066	125,931
Percent	2.01	0.57	57.47	31.90	4.02		4.02	100.00
Mean Length	433	552	499	570	509		588	525
Std. Error	18	4	2	3	6		5	1
Sample Size	7	2	200	111	14		14	348
Mean Weight			2.16	3.11	1.87		3.57	2.52
Std. Error			0.06	0.11			0.18	0.05
Sample Size			48	28	2		9	87

-Continued-

Table 39. (p 2 of 2).

	Age Group							
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	Total
All Periods Combined								
Males	724	903	37,753	35,078	10,256	226	6,824	91,764
Percent	0.31	0.39	16.39	15.23	4.45	0.10	2.96	39.85
Mean Length	428	587	519	584	535	628	599	552
Std. Error	1	10	2	3	3		4	2
Sample Size	2	4	125	127	43	1	26	328
Mean Weight		3.79	2.33	3.63	2.67		3.88	3.00
Std. Error		0.08	0.06	0.12	0.11		0.20	0.06
Sample Size		2	45	35	12		8	102
Females	1,809	4,112	56,529	49,359	15,138	452	11,116	138,515
Percent	0.79	1.79	24.55	21.43	6.57	0.20	4.83	60.15
Mean Length	435	551	492	559	513	555	576	526
Std. Error	25	5	2	2	3	10	2	1
Sample Size	5	17	172	180	61	2	45	482
Mean Weight		2.62	2.05	2.85	2.04	3.12	3.06	2.44
Std. Error		0.26	0.07	0.06	0.08		0.07	0.04
Sample Size		2	35	60	22	1	10	130
Both Sexes	2,533	5,015	94,282	84,437	25,394	678	17,940	230,279
Percent	1.10	2.18	40.94	36.67	11.03	0.29	7.79	100.00
Mean Length	433	557	503	569	522	579	585	536
Std. Error	18	4	2	2	2	10	2	1
Sample Size	7	21	297	307	104	3	71	810
Mean Weight		2.87	2.16	3.17	2.29	3.12	3.37	2.66
Std. Error		0.21	0.05	0.06	0.07		0.09	0.03
Sample Size		4	80	95	34	1	18	232

Table 40. Age and sex composition of sockeye salmon estimated catch and escapement, Wood River, 1989.

	Age Group									
	0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
<u>CATCH</u>										
Males Percent	299 0.01		3,562 0.14	222,687 8.73	1,164 0.05	298,487 11.70	5,779 0.23		8,235 0.32	540,213 21.17
Females Percent	4,188 0.16		5,406 0.21	326,754 12.80		462,753 18.13	6,469 0.25	1,166 0.05	18,695 0.73	825,431 32.34
Both Sexes Percent	4,487 0.18		8,968 0.35	549,441 21.53	1,164 0.05	761,240 29.83	12,248 0.48	1,166 0.05	26,930 1.06	1,365,644 53.51
<u>ESCAPEMENT</u>										
Males Percent	982 0.04	893 0.03	2,884 0.11	222,947 8.74	460 0.02	285,025 11.17	11,893 0.47		23,825 0.93	548,909 21.51
Females Percent	951 0.04	798 0.03	2,795 0.11	336,212 13.17		269,155 10.55	6,632 0.26	798 0.03	20,160 0.79	637,501 24.98
Both Sexes Percent	1,933 0.08	1,691 0.07	5,679 0.22	559,159 21.91	460 0.02	554,180 21.72	18,525 0.73	798 0.03	43,985 1.72	1,186,410 46.49
<u>CATCH AND ESCAPEMENT</u>										
Males Percent	1,281 0.05	893 0.03	6,446 0.25	445,634 17.46	1,624 0.06	583,512 22.86	17,672 0.69		32,060 1.26	1,089,122 42.68
Females Percent	5,139 0.20	798 0.03	8,201 0.32	662,966 25.98		731,908 28.68	13,101 0.51	1,964 0.08	38,855 1.52	1,462,932 57.32
Both Sexes Percent	6,420 0.25	1,691 0.07	14,647 0.57	1,108,600 43.44	1,624 0.06	1,315,420 51.54	30,773 1.21	1,964 0.08	70,915 2.78	2,552,054 100.00

Table 41. Daily sockeye salmon escapement counts, Wood River, 1989.

Date	Daily Count	Cumulative Count	Daily Percent of Total	Cumulative Percent
June	378	378	0.03	0.03
	690	1,068	0.06	0.09
	5,400	6,468	0.46	0.55
	14,502	20,970	1.22	1.77
	23,484	44,454	1.98	3.75
	23,190	67,644	1.95	5.70
	24,852	92,496	2.09	7.80
	9,504	102,000	0.80	8.60
	4,230	106,230	0.36	8.95
	89,466	195,696	7.54	16.49
July	102,918	298,614	8.67	25.17
	190,314	488,928	16.04	41.21
	233,634	722,562	19.69	60.90
	95,556	818,118	8.05	68.96
	28,230	846,348	2.38	71.34
	65,592	911,940	5.53	76.87
	64,608	976,548	5.45	82.31
	46,338	1,022,886	3.91	86.22
	21,636	1,044,522	1.82	88.04
	17,730	1,062,252	1.49	89.53
	16,320	1,078,572	1.38	90.91
	17,418	1,095,990	1.47	92.38
	21,960	1,117,950	1.85	94.23
	25,644	1,143,594	2.16	96.39
	14,514	1,158,108	1.22	97.61
	6,276	1,164,384	0.53	98.14
	8,484	1,172,868	0.72	98.86
	8,280	1,181,148	0.70	99.56
	3,948	1,185,096	0.33	99.89
	1,314	1,186,410	0.11	100.00

Table 42. Age, sex, and size composition of sockeye salmon escapement, Wood River, 1989.

	Age Group									
	0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
Sample Period 1: 21 June - 1 July										
Males			40,720		86,231	5,589		10,380		142,920
Percent			13.64		28.88	1.87		3.48		47.86
Mean Length			529		599	533		593		576
Std. Error			4		4	9		11		3
Sample Size			51		108	7		13		179
Females	798		24,751		115,774	2,395	798	11,178		155,694
Percent	0.27		8.29		38.77	0.80	0.27	3.74		52.14
Mean Length	365		501		567	527	587	572		555
Std. Error			7		2	23		7		2
Sample Size	1		31		145	3	1	14		195
Both Sexes	798		65,471		202,005	7,984	798	21,558		298,614
Percent	0.27		21.92		67.65	2.67	0.27	7.22		100.00
Mean Length	365		518		581	531	587	582		565
Std. Error			4		2	9		7		2
Sample Size	1		82		253	10	1	27		374
Sample Period 2: 2 - 4 July										
Males	893		116,933		136,570	4,463		11,604		270,463
Percent	0.17		22.51		26.29	0.86		2.23		52.06
Mean Length	344		510		588	527		596		553
Std. Error			2		3	23		7		2
Sample Size	1		131		153	5		13		303
Females		893	123,181		116,933	893		7,141		249,041
Percent		0.17	23.71		22.51	0.17		1.37		47.94
Mean Length		563	490		556	501		556		523
Std. Error			2		2			8		1
Sample Size		1	138		131	1		8		279
Both Sexes	893	893	240,114		253,503	5,356		18,745		519,504
Percent	0.17	0.17	46.22		48.80	1.03		3.61		100.00
Mean Length	344	563	500		573	523		580		539
Std. Error			1		2	23		6		1
Sample Size	1	1	269		284	6		21		582

-Continued-

Table 42. (p 2 of 3).

	Age Group									
	0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
Sample Period 3: 5 - 8 July										
Males		920	36,812	460	38,653	1,841		1,841		80,527
Percent		0.45	17.98	0.22	18.88	0.90		0.90		39.33
Mean Length		588	524	658	586	520		592		556
Std. Error		31	5		4	23		6		3
Sample Size		2	80	1	84	4		4		175
Females	460		920	92,031		27,609	1,380		1,841	124,241
Percent	0.22		0.45	44.94		13.48	0.67		0.90	60.67
Mean Length	513		530	486		533	530		539	498
Std. Error			32	4		5	3		22	3
Sample Size	1		2	200		60	3		4	270
Both Sexes	460		1,840	128,843	460	66,262	3,221		3,682	204,768
Percent	0.22		0.90	62.92	0.22	32.36	1.57		1.80	100.00
Mean Length	513		559	497	658	564	524		565	521
Std. Error			22	3		3	13		11	2
Sample Size	1		4	280	1	144	7		8	445
Sample Period 4: 9 - 20 July										
Males	982		1,964	28,482		23,571				54,999
Percent	0.60		1.20	17.42		14.41				33.63
Mean Length	471		561	498		597				542
Std. Error	48		32	4		5				3
Sample Size	2		4	58		48				112
Females	491		982	96,249		8,839	1,964			108,525
Percent	0.30		0.60	58.86		5.41	1.20			66.37
Mean Length	382		558	483		528	463			487
Std. Error			13	1		12	23			2
Sample Size	1		2	196		18	4			221
Both Sexes	1,473		2,946	124,731		32,410	1,964			163,524
Percent	0.90		1.80	76.28		19.82	1.20			100.00
Mean Length	441		560	487		578	463			505
Std. Error	48		21	1		5	23			2
Sample Size	3		6	254		66	4			333

-Continued-

Table 42. (p 3 of 3).

	Age Group									
	0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
All Periods Combined										
Males	982	893	2,884	222,947	460	285,025	11,893	23,825	548,909	
Percent	0.08	0.08	0.24	18.79	0.04	24.02	1.00	2.01	46.27	
Mean Length	471	344	570	514	658	592	529	594	558	
Std. Error	48		24	2		2	10	6	1	
Sample Size	2	1	6	320	1	393	16	30	769	
Females	951	798	2,795	336,212		269,155	6,632	798	20,160	637,501
Percent	0.08	0.07	0.24	28.34		22.69	0.56	0.07	1.70	53.73
Mean Length	445	365	550	488		557	505	587	563	520
Std. Error	48		17	1		1	13	5	1	
Sample Size	2	1	5	565		354	11	1	26	965
Both Sexes	1,933	1,691	5,679	559,159	460	554,180	18,525	798	43,985	1,186,410
Percent	0.16	0.14	0.48	47.13	0.04	46.71	1.56	0.07	3.71	100.00
Mean Length	458	354	560	498	658	575	520	587	580	538
Std. Error	48		16	1		1	8	4	1	
Sample Size	4	2	11	885	1	747	27	1	56	1,734

Table 43. Age and sex composition of sockeye salmon estimated catch and escapement, Igushik River, 1989.

	Age Group							
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	Total
<u>CATCH</u>								
Males	724	1,500	110,374	153,254	13,365	320	8,154	287,691
Percent	0.06	0.12	8.96	12.43	1.08	0.03	0.66	23.34
Females	1,809	4,781	188,965	248,468	24,827	957	13,387	483,194
Percent	0.15	0.39	15.33	20.16	2.01	0.08	1.09	39.20
Both Sexes	2,533	6,281	299,339	401,722	38,192	1,277	21,541	770,885
Percent	0.21	0.51	24.29	32.59	3.10	0.10	1.75	62.55
<u>ESCAPEMENT</u>								
Males	483	72,706	112,846	6,399	175	3,849	196,458	
Percent	0.04	5.90	9.16	0.52	0.01	0.31		15.94
Females	346	136,269	115,809	9,933	346	2,449	265,152	
Percent	0.03	11.06	9.40	0.81	0.03	0.20		21.51
Both Sexes	829	208,975	228,655	16,332	521	6,298	461,610	
Percent	0.07	16.96	18.55	1.33	0.04	0.51		37.45
<u>CATCH AND ESCAPEMENT</u>								
Males	724	1,983	183,080	266,100	19,764	495	12,003	484,149
Percent	0.06	0.16	14.85	21.59	1.60	0.04	0.97	39.28
Females	1,809	5,127	325,234	364,277	34,760	1,303	15,836	748,346
Percent	0.15	0.42	26.39	29.56	2.82	0.11	1.28	60.72
Both Sexes	2,533	7,110	508,314	630,377	54,524	1,798	27,839	1,232,495
Percent	0.21	0.58	41.24	51.15	4.42	0.15	2.26	100.00

Table 44. Daily sockeye salmon escapement counts, Igushik River, 1989.

Date	Daily Count	Cumulative Count	Daily Percent of Total	Cumulative Percent
June 27	5,982	5,982	1.30	1.30
28	17,022	23,004	3.69	4.98
29	11,112	34,116	2.41	7.39
30	7,140	41,256	1.55	8.94
July 1	6,630	47,886	1.44	10.37
2	12,462	60,348	2.70	13.07
3	25,476	85,824	5.52	18.59
4	31,014	116,838	6.72	25.31
5	27,066	143,904	5.86	31.17
6	16,998	160,902	3.68	34.86
7	40,176	201,078	8.70	43.56
8	48,384	249,462	10.48	54.04
9	47,196	296,658	10.22	64.27
10	31,920	328,578	6.91	71.18
11	22,320	350,898	4.84	76.02
12	12,732	363,630	2.76	78.77
13	17,232	380,862	3.73	82.51
14	18,618	399,480	4.03	86.54
15	16,584	416,064	3.59	90.13
16	15,894	431,958	3.44	93.58
17	7,854	439,812	1.70	95.28
18	4,650	444,462	1.01	96.29
19	5,376	449,838	1.16	97.45
20	4,176	454,014	0.90	98.35
21	2,274	456,288	0.49	98.85
22	2,352	458,640	0.51	99.36
23	1,818	460,458	0.39	99.75
24	1,152	461,610	0.25	100.00

**Table 45. Age, sex, and size composition of sockeye salmon escapement,
Igushik River, 1989.**

	Age Group						Total
	0.3	1.2	1.3	2.2	1.4	2.3	
Sample Period 1: 27 June - 2 July							
Males	4,440		31,078			493	36,011
Percent	7.36		51.50			0.82	59.67
Mean Length	550		624			622	615
Std. Error	6		2			13	2
Sample Size	27		189			3	219
Females	3,946		20,227			164	24,337
Percent	6.54		33.52			0.27	40.33
Mean Length	523		578			550	569
Std. Error	7		2				2
Sample Size	24		123			1	148
Both Sexes	8,386		51,305			657	60,348
Percent	13.90		85.02			1.09	100.00
Mean Length	537		606			604	596
Std. Error	4		2			13	2
Sample Size	51		312			4	367
Sample Period 2: 3 - 5 July							
Males	10,139		26,220		350	175	524
Percent	12.13		31.38		0.42	0.21	0.63
Mean Length	538		611		555	635	633
Std. Error	3		3		25		8
Sample Size	58		150		2	1	3
Females	16,082		28,144		1,398		524
Percent	19.25		33.68		1.67		0.63
Mean Length	509		574		533		560
Std. Error	2		2		9		23
Sample Size	92		161		8		3
Both Sexes	26,221		54,364		1,748	175	1,048
Percent	31.38		65.06		2.09	0.21	1.25
Mean Length	520		592		537	635	597
Std. Error	2		2		9		12
Sample Size	150		311		10	1	6
Sample Period 3: 6 - 10 July							
Males	29,396		45,649		4,842		1,383
Percent	15.92		24.72		2.62		0.75
Mean Length	540		610		533		609
Std. Error	4		3		6		22
Sample Size	85		132		14		4
Females	346		41,154		54,642		1,037
Percent	0.19		22.28		29.59		0.56
Mean Length	605		515		563		584
Std. Error	3		3		7		21
Sample Size	1		119		158		3
Both Sexes	346		70,550		100,291		2,420
Percent	0.19		38.20		54.31		1.31
Mean Length	605		526		584		598
Std. Error	2		2		5		15
Sample Size	1		204		290		7
							534

-Continued-

Table 45. (p 2 of 2).

	Age Group						
	0.3	1.2	1.3	2.2	1.4	2.3	Total
Sample Period 4: 11 - 24 July							
Males	483	28,731	9,899	1,207		1,449	41,769
Percent	0.36	21.60	7.44	0.91		1.09	31.40
Mean Length	605	538	614	556		620	560
Std. Error	15	2	5	8		9	2
Sample Size	2	119	41	5		6	173
Females		75,087	12,796	2,656		724	91,263
Percent		56.44	9.62	2.00		0.54	68.60
Mean Length		507	558	505		577	515
Std. Error		1	5	5		20	1
Sample Size		311	53	11		3	378
Both Sexes	483	103,818	22,695	3,863		2,173	133,032
Percent	0.36	78.04	17.06	2.90		1.63	100.00
Mean Length	605	516	583	521		606	529
Std. Error	15	1	4	4		9	1
Sample Size	2	430	94	16		9	551
All Periods Combined							
Males	483	72,706	112,846	6,399	175	3,849	196,458
Percent	0.10	15.75	24.45	1.39	0.04	0.83	42.56
Mean Length	605	540	614	538	635	618	584
Std. Error	15	2	2	5		9	1
Sample Size	2	289	512	21	1	16	841
Females	346	136,269	115,809	9,933	346	2,449	265,152
Percent	0.07	29.52	25.09	2.15	0.07	0.53	57.44
Mean Length	605	510	567	527	635	575	537
Std. Error		1	2	4		12	1
Sample Size	1	546	495	36	1	10	1,089
Both Sexes	829	208,975	228,655	16,332	521	6,298	461,610
Percent	0.18	45.27	49.53	3.54	0.11	1.36	100.00
Mean Length	605	521	591	531	635	601	557
Std. Error	15	1	1	3		7	1
Sample Size	3	835	1,007	57	2	26	1,930

Table 46. Age and sex composition of sockeye salmon estimated catch and escapement, Nushagak River, 1989.

	Age Group									
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total	
<u>CATCH</u>										
Males	10,139	98,557	23,680	10,996	121,893	324	3,190	149	268,928	
Percent	0.82	7.99	1.92	0.89	9.88	0.03	0.26	0.01	21.80	
Females	17,246	211,392	7,506	9,486	200,450	419	3,835	1,197	451,531	
Percent	1.40	17.13	0.61	0.77	16.25	0.03	0.31	0.10	36.59	
Both Sexes	27,385	309,949	31,186	20,482	322,343	743	7,025	1,346	720,459	
Percent	2.22	25.12	2.53	1.66	26.12	0.06	0.57	0.11	58.39	
<u>ESCAPEMENT</u>										
Males	33,282	79,798	23,708	4,346	116,396	667	5,916	430	264,543	
Percent	2.70	6.47	1.92	0.35	9.43	0.05	0.48	0.03	21.44	
Females	3,916	109,291	7,723	7,013	116,589	430	2,625	1,291	248,878	
Percent	0.32	8.86	0.63	0.57	9.45	0.03	0.21	0.10	20.17	
Both Sexes	37,198	189,089	31,431	11,359	232,985	1,097	8,541	1,721	513,421	
Percent	3.01	15.32	2.55	0.92	18.88	0.09	0.69	0.14	41.61	
<u>CATCH AND ESCAPEMENT</u>										
Males	43,421	178,355	47,388	15,342	238,289	991	9,106	579	533,471	
Percent	3.52	14.45	3.84	1.24	19.31	0.08	0.74	0.05	43.24	
Females	21,162	320,683	15,229	16,499	317,039	849	6,460	2,488	700,409	
Percent	1.72	25.99	1.23	1.34	25.69	0.07	0.52	0.20	56.76	
Both Sexes	64,583	499,038	62,617	31,841	555,328	1,840	15,566	3,067	1,233,880	
Percent	5.23	40.44	5.07	2.58	45.01	0.15	1.26	0.25	100.00	

Table 47. Daily sockeye salmon escapement counts, Nushagak River
 (Portage Creek), 1989.

	Date	Daily Count ^a	Cumulative Count	Daily Percent of Total	Cumulative Percent
June	6	2	2	0.00	0.00
	7	4	6	0.00	0.00
	8	3	9	0.00	0.00
	9	14	23	0.00	0.00
	10	19	42	0.00	0.01
	11	9	51	0.00	0.01
	12	23	74	0.00	0.01
	13	25	99	0.00	0.02
	14	23	122	0.00	0.02
	15	25	147	0.00	0.03
	16	24	171	0.00	0.03
	17	78	249	0.02	0.05
	18	114	363	0.02	0.07
	19	21	384	0.00	0.07
	20	64	448	0.01	0.09
	21	361	809	0.07	0.16
	22	1,082	1,891	0.21	0.37
	23	1,372	3,263	0.27	0.64
	24	3,460	6,723	0.67	1.31
	25	15,260	21,983	2.97	4.28
	26	36,432	58,415	7.10	11.38
	27	24,731	83,146	4.82	16.19
	28	14,893	98,039	2.90	19.10
	29	3,495	101,534	0.68	19.78
July	30	37,613	139,147	7.33	27.10
	1	34,028	173,175	6.63	33.73
	2	57,488	230,663	11.20	44.93
	3	55,416	286,079	10.79	55.72
	4	106,391	392,470	20.72	76.44
	5	15,922	408,392	3.10	79.54
	6	14,731	423,123	2.87	82.41
	7	19,106	442,229	3.72	86.13
	8	12,635	454,864	2.46	88.59
	9	5,812	460,676	1.13	89.73
	10	9,242	469,918	1.80	91.53
	11	3,442	473,360	0.67	92.20
	12	12,543	485,903	2.44	94.64
	13	4,313	490,216	0.84	95.48
	14	4,903	495,119	0.95	96.44
	15	2,713	497,832	0.53	96.96
	16	1,946	499,778	0.38	97.34
	17	2,692	502,470	0.52	97.87

-Continued-

Table 47. (p 2 of 2).

Date	Daily Count ^a	Cumulative Count	Daily Percent of Total	Cumulative Percent
July 18	4,090	506,560	0.80	98.66
19	1,477	508,037	0.29	98.95
20	1,223	509,260	0.24	99.19
21	1,294	510,554	0.25	99.44
22	376	510,930	0.07	99.51
23	387	511,317	0.08	99.59
24	413	511,730	0.08	99.67
25	277	512,007	0.05	99.72
26	148	512,155	0.03	99.75
27	75	512,230	0.01	99.77
28	90	512,320	0.02	99.79
29	84	512,404	0.02	99.80
30	177	512,581	0.03	99.84
31	502	513,083	0.10	99.93
Aug 1	128	513,211	0.02	99.96
2	38	513,249	0.01	99.97
3	45	513,294	0.01	99.98
4	29	513,323	0.01	99.98
5	25	513,348	0.00	99.99
6	35	513,383	0.01	99.99
7	38	513,421	0.01	100.00

^a Escapement numbers represent sonar counts made at Portage Creek.

Table 48. Age, sex, and size composition of sockeye salmon escapement, Nushagak River (Portage Creek), 1989.

	Age Group								
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
Sample Period 1: 6 June - 2 July									
Males	8,607	40,452	9,037	3,012	56,376		2,582	430	120,496
Percent	3.73	17.54	3.92	1.31	24.44		1.12	0.19	52.24
Mean Length	436	565	433	634	586		604	624	558
Std. Error	11	5	9	10	3		17	2	
Sample Size	20	94	21	7	131		6	1	280
Females	2,582	42,604	1,721	3,012	57,236	430	1,291	1,291	110,167
Percent	1.12	18.47	0.75	1.31	24.81	0.19	0.56	0.56	47.76
Mean Length	513	548	461	580	555	496	577	584	551
Std. Error	20	2	6	9	2		15	1	1
Sample Size	6	99	4	7	133	1	3	3	256
Both Sexes	11,189	83,056	10,758	6,024	113,612	430	3,873	1,721	230,663
Percent	4.85	36.01	4.66	2.61	49.25	0.19	1.68	0.75	100.00
Mean Length	454	556	437	607	570	496	595	594	555
Std. Error	10	3	8	7	2		12	1	1
Sample Size	26	193	25	14	264	1	9	4	536
Sample Period 2: 3 July - 7 August									
Males	24,675	39,346	14,671	1,334	60,020	667	3,334		144,047
Percent	8.73	13.92	5.19	0.47	21.23	0.24	1.18		50.94
Mean Length	418	568	453	608	587	530	623		540
Std. Error	6	6	10	3	5		5		3
Sample Size	37	59	22	2	90	1	5		216
Females	1,334	66,687	6,002	4,001	59,353		1,334		138,711
Percent	0.47	23.58	2.12	1.41	20.99		0.47		49.06
Mean Length	401	553	476	580	546		545		546
Std. Error	19	3	10	11	3		15		2
Sample Size	2	100	9	6	89		2		208
Both Sexes	26,009	106,033	20,673	5,335	119,373	667	4,668		282,758
Percent	9.20	37.50	7.31	1.89	42.22	0.24	1.65		100.00
Mean Length	417	558	460	587	567	530	601		543
Std. Error	6	3	8	8	3		6		2
Sample Size	39	159	31	8	179	1	7		424

Table 48. (p 2 of 2).

	Age Group								
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
All Periods Combined									
Males	33,282	79,798	23,708	4,346	116,396	667	5,916	430	264,543
Percent	6.48	15.54	4.62	0.85	22.67	0.13	1.15	0.08	51.53
Mean Length	423	566	445	626	586	530	615	624	548
Std. Error	6	4	7	7	3		8		2
Sample Size	57	153	43	9	221	1	11	1	496
Females	3,916	109,291	7,723	7,013	116,589	430	2,625	1,291	248,878
Percent	0.76	21.29	1.50	1.37	22.71	0.08	0.51	0.25	48.47
Mean Length	475	551	473	580	550	496	561	584	548
Std. Error	15	2	8	7	2		10	1	1
Sample Size	8	199	13	13	222	1	5	3	464
Both Sexes	37,198	189,089	31,431	11,359	232,985	1,097	8,541	1,721	513,421
Percent	7.25	36.83	6.12	2.21	45.38	0.21	1.66	0.34	100.00
Mean Length	428	558	452	598	568	517	598	594	548
Std. Error	5	2	6	5	2		6	1	1
Sample Size	65	352	56	22	443	2	16	4	960

Table 49. Age, sex, and size composition of chinook salmon commercial catch, Nushagak District, 1989.

	Age Group				
	1.2	1.3	1.4	1.5	Total
All Periods Combined					
Males	5,111	3,833	2,286	67	11,297
Percent ^a	28.57	21.43	12.78	0.37	63.16
Mean Length	551	698	837	950	661
Std. Error	6	11	17		6
Sample Size	76	57	34	1	168
Mean Weight	2.99	6.25	11.66		5.87
Std. Error	0.16	0.45	0.94		0.25
Sample Size	30	21	19		70
Females	1,345	1,883	3,295	67	6,590
Percent ^a	7.52	10.53	18.42	0.37	36.84
Mean Length	596	751	829	856	760
Std. Error	12	17	9		7
Sample Size	20	28	49	1	98
Mean Weight	4.16	7.31	9.54	9.00	7.80
Std. Error	0.42	1.14	0.59		0.45
Sample Size	12	8	22	1	43
Both Sexes	6,456	5,716	5,581	134	17,887
Percent ^a	36.09	31.96	31.20	0.75	100.00
Mean Length	560	715	832	903	697
Std. Error	5	9	9		4
Sample Size	96	85	83	2	266
Mean Weight	3.23	6.60	10.41	9.00	6.58
Std. Error	0.15	0.48	0.52		0.23
Sample Size	42	29	41	1	113

^a Based on a sample size of 266 and given these estimated age proportions, this sample would estimate the true age composition within 5 percentage points 70% of the time.

Table 50. Daily escapement counts of chinook, chum, pink, and coho salmon, Nushagak River (Portage Creek), 1989.

Date	Chinook		Chum		Pink		Coho	
	Daily ^a	Cum	Daily ^a	Cum	Daily ^a	Cum	Daily ^a	Cum
June 6	2	2	2	2	0	0	0	0
7	4	6	128	130	0	0	0	0
8	3	9	149	279	0	0	0	0
9	14	23	103	382	0	0	0	0
10	19	42	112	494	0	0	0	0
11	9	51	11	505	0	0	0	0
12	23	74	31	536	0	0	0	0
13	25	99	44	580	0	0	0	0
14	23	122	106	686	0	0	0	0
15	25	147	71	757	0	0	0	0
16	24	171	127	884	0	0	0	0
17	138	309	127	1,011	0	0	0	0
18	188	497	180	1,191	0	0	0	0
19	64	561	48	1,239	0	0	0	0
20	109	670	103	1,342	0	0	0	0
21	450	1,120	1,377	2,719	0	0	0	0
22	1,746	2,866	4,053	6,772	0	0	0	0
23	2,712	5,578	5,035	11,807	0	0	0	0
24	5,876	11,454	12,896	24,703	0	0	0	0
25	2,561	14,015	13,309	38,012	0	0	0	0
26	5,973	19,988	37,152	75,164	0	0	0	0
27	1,257	21,245	19,834	94,998	0	0	0	0
28	838	22,083	11,501	106,499	0	0	0	0
29	2,167	24,250	12,653	119,152	0	0	0	0
30	1,521	25,771	14,558	133,710	0	0	0	0
July 1	395	26,166	17,800	151,510	0	0	0	0
2	417	26,583	23,527	175,037	0	0	0	0
3	6	26,589	25,766	200,803	169	169	0	0
4	1,386	27,975	35,698	236,501	0	169	0	0
5	2,614	30,589	11,076	247,577	0	169	0	0
6	2,812	33,401	9,763	257,340	0	169	0	0
7	3,861	37,262	12,403	269,743	0	169	0	0
8	2,817	40,079	7,878	277,621	0	169	0	0
9	1,104	41,183	7,435	285,056	0	169	0	0
10	1,905	43,088	11,640	296,696	0	169	0	0
11	1,059	44,147	6,060	302,756	0	169	0	0
12	6,996	51,143	16,412	319,168	0	169	0	0
13	2,408	53,551	5,646	324,814	0	169	0	0
14	1,591	55,142	5,343	330,157	0	169	0	0
15	2,527	57,669	6,137	336,294	0	169	246	246
16	2,070	59,739	4,551	340,845	0	169	172	418

-Continued-

Table 50. (p 2 of 2).

Date	Chinook		Chum		Pink		Coho	
	Daily ^a	Cum	Daily ^a	Cum	Daily ^a	Cum	Daily ^a	Cum
July 17	2,186	61,925	5,902	346,747	0	169	250	668
18	3,628	65,553	9,144	355,891	0	169	374	1,042
19	1,420	66,973	3,366	359,257	0	169	133	1,175
20	1,828	68,801	4,094	363,351	0	169	670	1,845
21	1,619	70,420	4,173	367,524	0	169	551	2,396
22	795	71,215	1,375	368,899	0	169	322	2,718
23	728	71,943	1,371	370,270	0	169	287	3,005
24	1,106	73,049	1,322	371,592	0	169	0	3,005
25	748	73,797	891	372,483	0	169	0	3,005
26	452	74,249	510	372,993	0	169	0	3,005
27	317	74,566	317	373,310	0	169	0	3,005
28	372	74,938	375	373,685	0	169	0	3,005
29	327	75,265	249	373,934	0	169	1,263	4,268
30	517	75,782	483	374,417	0	169	2,362	6,630
31	1,098	76,880	1,279	375,696	0	169	6,066	12,696
Aug. 1	474	77,354	375	376,071	0	169	1,886	14,582
2	205	77,559	126	376,197	0	169	670	15,252
3	362	77,921	0	376,197	0	169	269	15,521
4	170	76,091	0	376,197	0	169	175	15,696
5	59	78,150	0	376,197	0	169	150	15,846
6	57	78,207	0	376,197	0	169	208	16,054
7	95	78,302	0	376,197	0	169	227	16,281
8	0	78,302	62	376,259	0	169	1,625	17,906
9	0	78,302	568	376,827	0	169	17,005	34,911
10	0	78,302	549	377,376	0	169	17,916	52,827
11	0	78,302	136	377,512	0	169	3,778	56,605
12	0	78,302	0	377,512	0	169	13,365	69,970
13	0	78,302	0	377,512	0	169	5,738	75,708
14	0	78,302	0	377,512	0	169	2,300	78,008
15	0	78,302	0	377,512	0	169	1,568	79,596
16	0	78,302	0	377,512	0	169	704	80,280
17	0	78,302	0	377,512	0	169	339	80,619
18	0	78,302	0	377,512	0	169	350	80,969
19	0	78,302	0	377,512	0	169	795	81,764
20	0	78,302	0	377,512	0	169	470	82,234
21	0	78,302	0	377,512	0	169	352	82,586
22	0	78,302	0	377,512	0	169	291	82,877
23	0	78,302	0	377,512	0	169	195	83,072
24	0	78,302	0	377,512	0	169	1,275	84,347
25	0	78,302	0	377,512	0	169	282	84,629
26	0	78,302	0	377,512	0	169	78	84,707

^a Escapement numbers represent sonar counts made at Portage Creek.

Table 51. Age, sex, and size composition of chinook salmon escapement, Nushagak River (Portage Creek), 1989.

	Age Group				
	1.2	1.3	1.4	1.5	Total
All Periods Combined					
Males	9,357	7,879	13,297	1,477	32,010
Percent ^a	11.95	10.06	16.98	1.89	40.88
Mean Length	526	745	892	909	750
Std. Error	14	23	14	65	10
Sample Size	19	16	27	3	65
Females	1,970	12,312	28,563	3,447	46,292
Percent ^a	2.52	15.72	36.48	4.40	59.12
Mean Length	529	782	831	822	804
Std. Error	9	14	10	45	8
Sample Size	4	25	58	7	94
Both Sexes	11,327	20,191	41,860	4,924	78,302
Percent ^a	14.47	25.79	53.46	6.29	100.00
Mean Length	526	767	851	848	782
Std. Error	12	13	8	37	6
Sample Size	23	41	85	10	159

^a Based on a sample size of 159 and given these estimated age proportions, this sample size would estimate the true age composition within 10 percentage points 95% of the time.

Table 52. Age, sex, and size composition of chum salmon commercial catch, Nushagak District, 1989.

	Age Group			
	0.2	0.3	0.4	0.5
				Total
Sample Period 1: 22 June - 1 July				
Males	19,717	4,572	286	24,575
Percent	18.60	4.31	0.27	23.18
Mean Length	576	602	658	582
Std. Error	3	6		3
Sample Size	69	16	1	86
Mean Weight	3.31	3.81		3.40
Std. Error	0.13	0.31		0.12
Sample Size	23	6		29
Females	65,154	16,288		81,442
Percent	61.46	15.36		76.82
Mean Length	552	568		556
Std. Error	1	4		1
Sample Size	228	57		285
Mean Weight	2.75	2.91		2.78
Std. Error	0.04	0.07		0.03
Sample Size	111	26		137
Both Sexes	84,871	20,860	286	106,017
Percent	80.05	19.68	0.27	100.00
Mean Length	558	576	658	562
Std. Error	1	3		1
Sample Size	297	73	1	371
Mean Weight	2.88	3.11		2.92
Std. Error	0.04	0.09		0.04
Sample Size	134	32		166

-Continued-

Table 52. (p 2 of 3).

	Age Group				
	0.2	0.3	0.4	0.5	Total
Sample Period 2: 3 July - 15 September					
Males	45,295	16,238			61,533
Percent	13.32	4.77			18.09
Mean Length	579	600			585
Std. Error	4	8			4
Sample Size	53	19			72
Mean Weight	3.34	4.94			3.76
Std. Error	0.13	1.29			.35
Sample Size	11	6			17
Females	1,709	235,874	40,167	855	278,605
Percent	0.50	69.35	11.81	0.25	81.91
Mean Length	503	552	568	645	554
Std. Error	3	1	4		1
Sample Size	2	276	47	1	326
Mean Weight	1.99	2.70	2.84	4.72	2.72
Std. Error	0.04	0.04	0.10		0.04
Sample Size	2	97	22	1	122
Both Sexes	1,709	281,169	56,405	855	340,138
Percent	0.50	82.66	16.58	0.25	100.00
Mean Length	503	557	577	645	560
Std. Error	3	1	4		1
Sample Size	2	329	66	1	398
Mean Weight	1.99	2.80	3.44	4.72	2.91
Std. Error	0.04	0.04	0.38		0.07
Sample Size	2	108	28	1	139

-Continued-

Table 52. (p 3 of 3).

	Age Group				
	0.2	0.3	0.4	0.5	Total
All Periods Combined					
Males	65,012	20,810	286	86,108	
Percent	14.57	4.66	0.06	19.30	
Mean Length	578	600	658	584	
Std. Error	3	7		3	
Sample Size	122	35	1	158	
Mean Weight	3.33	4.69		3.66	
Std. Error	0.10	1.01		0.26	
Sample Size	34	12		46	
Females	1,709	301,028	56,455	855	360,047
Percent	0.38	67.47	12.65	0.19	80.70
Mean Length	503	552	568	645	555
Std. Error	3	1	3		1
Sample Size	2	504	104	1	611
Mean Weight	1.99	2.71	2.86	4.72	2.74
Std. Error	0.04	0.03	0.08		0.03
Sample Size	2	208	48	1	259
Both Sexes	1,709	366,040	77,265	1,141	446,155
Percent	0.38	82.04	17.32	0.26	100.00
Mean Length	503	557	577	648	560
Std. Error	3	1	3		1
Sample Size	2	626	139	2	769
Mean Weight	1.99	2.82	3.35	4.72	2.91
Std. Error	0.04	0.03	0.28		0.06
Sample Size	2	242	60	1	305

Table 53. Age, sex, and size composition of chum salmon escapement,
Nushagak River (Portage Creek), 1989.

	Age Group				
	0.2	0.3	0.4	0.5	Total
All Periods Combined					
Males	146,356	44,598	2,513	193,467	
Percent	38.77	11.81	0.67	51.25	
Mean Length	590	607	623	594	
Std. Error	2	4	10	2	
Sample Size	233	71	4	308	
Females	628	150,754	30,779	1,884	184,045
Percent	0.17	39.93	8.15	0.50	48.75
Mean Length	492	549	576	580	553
Std. Error		2	4	10	2
Sample Size	1	240	49	3	293
Both Sexes	628	297,110	75,377	4,397	377,512
Percent	0.17	78.70	19.97	1.16	100.00
Mean Length	492	569	594	604	574
Std. Error		1	3	7	1
Sample Size	1	473	120	7	601

Table 54. Age, sex, and size composition of coho salmon commercial catch, Nushagak District, 1989.

	Age Group			
	1.1	2.1	3.1	Total
All Periods Combined				
Males	3,083	28,187	1,321	32,591
Percent ^a	4.00	36.57	1.71	42.29
Mean Length	520	531	505	529
Std. Error	12	5	29	5
Sample Size	7	64	3	74
Mean Weight	2.80	3.05		3.03
Std. Error		0.17		0.15
Sample Size	1	14		15
Females	3,964	40,078	440	44,482
Percent ^a	5.14	52.00	0.57	57.71
Mean Length	557	549	583	550
Std. Error	9	4		4
Sample Size	9	91	1	101
Mean Weight	3.55	3.04	3.51	3.09
Std. Error		0.10		0.09
Sample Size	1	28	1	30
Both Sexes	7,047	68,265	1,761	77,073
Percent ^a	9.14	88.57	2.28	100.00
Mean Length	541	542	525	541
Std. Error	7	3	29	3
Sample Size	16	155	4	175
Mean Weight	3.22	3.04	3.51	3.06
Std. Error		0.09		0.08
Sample Size	2	42	1	45

^a Based on a sample size of 175 and given these estimated age proportions, this sample would estimate the true age composition within 10 percentage points 95% of the time.

Table 55. Age, sex, and size composition of coho salmon escapement, Nushagak River (Portage Creek), 1989.

	Age Group			
	1.1	2.1	3.1	Total
All Periods Combined				
Males	4,941	39,177	1,412	45,530
Percent	5.83	46.25	1.67	53.75
Mean Length	500	524	531	522
Std. Error	16	5	28	5
Sample Size	14	111	4	129
Females	2,471	35,294	1,412	39,177
Percent	2.92	41.67	1.67	46.25
Mean Length	513	542	576	541
Std. Error	13	4	8	4
Sample Size	7	100	4	111
Both Sexes	7,412	74,471	2,824	84,707
Percent	8.75	87.92	3.33	100.00
Mean Length	504	533	554	531
Std. Error	11	3	14	3
Sample Size	21	211	8	240

^a Based on a sample size of 240 and given these estimated age proportions, this sample would estimate the true age composition within 5 percentage points 70% of the time.

Table 56. Commercial salmon catch by period and species, Togiak District, 1989.

Period ^a	Catch (number of fish)					Total
	Sockeye	Chinook	Chum	Pink	Coho	
6/08	8	2	13	0	0	23
6/12	117	28	174	0	0	319
6/13	159	192	396	0	0	747
6/14	421	114	575	0	0	1,110
6/15	286	129	335	0	0	750
6/16	141	94	519	0	0	754
6/17	10	65	218	0	0	293
6/19	907	453	2,034	0	0	3,394
6/20	1,944	1,018	3,936	0	0	6,898
6/21	1,730	499	3,312	0	0	5,541
6/22	2,150	664	3,794	0	0	6,608
6/23	896	226	1,527	0	0	2,649
6/26	5,155	1,220	5,255	0	0	11,630
6/27	4,968	1,004	11,253	3	0	17,228
6/28	4,395	967	15,312	3	0	20,677
6/29	4,184	566	12,730	1	0	17,481
6/30	2,512	274	6,401	0	0	9,187
7/01	206	9	306	0	0	521
7/10	9,405	1,178	34,353	27	1	44,964
7/11	11,301	1,414	31,953	49	0	44,717
7/12	12,584	685	23,579	19	0	36,867
7/13	9,598	376	14,835	20	0	24,829
7/14	5,499	211	10,829	7	0	16,546
7/15	511	4	1,432	0	0	1,947
7/24	464	17	1,902	2	5	2,390
7/25	619	13	1,374	7	15	2,028
7/26	72	1	109	0	0	182
7/27	296	2	405	0	3	706
7/31-8/04	4,996	97	10,971	33	634	16,731
8/07-8/10	1,407	46	2,413	7	5,912	9,785
8/14-8/17	762	24	658	21	15,580	17,045
8/21-8/24	445	12	132	10	22,049	22,648
8/29-8/31	206	0	14	6	8,331	8,557
9/04-9/07	97	0	5	2	4,770	4,874
Total	88,451	11,604	203,054	217	57,300	360,626
Percent	24.5	3.2	56.3	0.1	15.9	100.0

^a See Table 2 for emergency order adjustments in the regular weekly fishing schedule.

Table 57. Commercial salmon catch by period and species, Togiak River Section, Togiak District, 1989.

Period ^a	Catch (number of fish)					Total
	Sockeye	Chinook	Chum	Pink	Coho	
6/12	11	15	54	0	0	80
6/13	37	45	91	0	0	173
6/14	48	35	121	0	0	204
6/15	71	84	102	0	0	257
6/16	30	11	12	0	0	53
6/17	0	27	32	0	0	59
6/19	349	228	743	0	0	1,320
6/20	1,013	674	2,528	0	0	4,215
6/21	839	321	1,822	0	0	2,982
6/22	1,382	477	2,775	0	0	4,634
6/23	855	199	1,436	0	0	2,490
6/26	4,195	1,022	4,036	0	0	9,253
6/27	4,167	901	10,433	1	0	15,502
6/28	3,020	791	8,116	3	0	11,930
6/29	2,844	462	8,403	1	0	11,710
6/30	1,793	227	3,618	0	0	5,638
7/10	7,936	1,081	29,669	20	1	38,707
7/11	9,025	1,343	29,326	39	0	39,733
7/12	10,114	606	20,830	18	0	31,568
7/13	8,650	348	13,917	20	0	22,935
7/14	4,306	201	7,249	7	0	11,763
7/15	0	0	0	0	0	0
7/24-7/27	0	0	0	0	0	0
7/31-8/04	4,969	97	10,935	33	620	16,654
8/07-8/10	1,324	37	2,240	7	4,444	8,052
8/14-8/17	600	16	539	17	8,207	9,379
8/21-8/24	410	7	120	10	12,967	13,514
8/29-8/31	184	0	14	6	5,179	5,383
9/04-9/07	96	0	5	2	4,742	4,845
Total	68,268	9,255	159,166	184	36,160	273,033
Percent	25.0	3.4	58.3	0.1	13.2	100.0

^a Togiak River Section opened four days per week. See Table 2 for emergency order adjustments in weekly fishing periods.

Table 58. Age and sex composition of sockeye salmon catch and escapement,
Togiak River Section, Togiak District, 1989.

	Age Group										
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	Total
<u>CATCH</u>											
Males	41	1,953	6,556		153	18,842	497	236	1,432		29,710
Percent	0.03	1.28	4.29		0.10	12.34	0.33	0.15	0.94		19.45
Females		3,138	5,416			27,734	71	471	1,657	71	38,558
Percent		2.05	3.55			18.16	0.05	0.31	1.08	0.05	25.24
Both Sexes	41	5,091	11,972		153	46,576	568	707	3,089	71	68,268
Percent	0.03	3.33	7.84		0.10	30.49	0.37	0.46	2.02	0.05	44.69
<u>ESCAPEMENT^a</u>											
Males	88	400	7,225	92		19,721	1,437	452	4,701	45	34,161
Percent	0.06	0.26	4.73	0.06		12.91	0.94	0.30	3.08	0.03	22.36
Females		675	10,825			28,153	1,322	451	8,760	133	50,319
Percent		0.44	7.09			18.43	0.87	0.30	5.73	0.09	32.94
Both Sexes	88	1,075	18,050	92		47,874	2,759	903	13,461	178	84,480
Percent	0.06	0.70	11.82	0.06		31.34	1.81	0.59	8.81	0.12	55.31
<u>CATCH AND ESCAPEMENT</u>											
Males	129	2,353	13,781	92	153	38,563	1,934	688	6,133	45	63,871
Percent	0.08	1.54	9.02	0.06	0.10	25.25	1.27	0.45	4.02	0.03	41.81
Females		3,813	16,241			55,887	1,393	922	10,417	204	88,877
Percent		2.50	10.63			36.59	0.91	0.60	6.82	0.13	58.19
Both Sexes	129	6,166	30,022	92	153	94,450	3,327	1,610	16,550	249	152,748
Percent	0.08	4.04	19.65	0.06	0.10	61.83	2.18	1.05	10.83	0.16	100.00

^a Based on aerial surveys, an additional 19,760 sockeye salmon escaped to Togiak River (15,200 in the mainstem below the tower and 4,560 in tributaries) but were not sampled.

**Table 59. Age, sex, and size composition of sockeye salmon commercial catch,
Togiak River Section, Togiak District, 1989.**

	Age Group									
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 1: 12 - 30 June										
Males	41	1,029	658	82	7,612		165	82		9,669
Percent	0.20	4.98	3.19	0.40	36.85		0.80	0.40		46.81
Mean Length	555	584	515	640	600		605	615		593
Std. Error		5	8	20	2		8	30		2
Sample Size	1	25	16	2	185		4	2		235
Mean Weight		3.47	2.20	4.53	3.87		3.99	4.53		3.73
Std. Error		0.23	0.21		0.08					0.07
Sample Size		11	5	1	47		1	1		66
Females		864	370		9,257		329	165		10,985
Percent		4.18	1.79		44.82		1.59	0.80		53.19
Mean Length		552	522		559		586	570		558
Std. Error		5	9		2		6	16		1
Sample Size		21	9		225		8	4		267
Mean Weight		3.09	2.26		2.88		3.33	2.90		2.89
Std. Error		0.33			0.05		0.13	0.18		0.05
Sample Size		4	1		52		4	2		63
Both Sexes	41	1,893	1,028	82	16,869		494	247		20,654
Percent	0.20	9.17	4.98	0.40	81.67		2.39	1.20		100.00
Mean Length	555	569	518	640	577		592	585		574
Std. Error		4	6	20	1		5	14		1
Sample Size	1	46	25	2	410		12	6		502
Mean Weight		3.30	2.22	4.53	3.33		3.55	3.44		3.28
Std. Error		0.19	0.21		0.04		0.13	0.18		0.04
Sample Size		15	6	1	99		5	3		129
Sample Period 2: 10 July - 7 September										
Males		924	5,898	71	11,230	497	71	1,350		20,041
Percent		1.94	12.39	0.15	23.59	1.04	0.15	2.84		42.09
Mean Length		589	530	620	594	535	620	609		575
Std. Error		9	2		2	12		6		2
Sample Size		13	83	1	158	7	1	19		282
Mean Weight		2.90	2.73	3.99	3.81	2.90		4.38		3.47
Std. Error		0.18	0.08		0.10	0.14		0.27		0.06
Sample Size		2	22	1	38	3		5		71
Females		2,274	5,046		18,477	71	142	1,492	71	27,573
Percent		4.78	10.60		38.81	0.15	0.30	3.13	0.15	57.91
Mean Length		555	509		561	520	605	574	570	552
Std. Error		4	3		1		45	4		1
Sample Size		32	71		260	1	2	21	1	388
Mean Weight		2.86	2.15		2.86			3.02	2.81	2.74
Std. Error		0.10	0.07		0.05			0.12		0.04
Sample Size		9	20		65			4	1	99
Both Sexes		3,198	10,944	71	29,707	568	213	2,842	71	47,614
Percent		6.72	22.98	0.15	62.39	1.19	0.45	5.97	0.15	100.00
Mean Length		564	520	620	573	533	610	590	570	561
Std. Error		4	2		1	12	45	4		1
Sample Size		45	154	1	418	8	3	40	1	670
Mean Weight		2.87	2.46	3.99	3.22	2.90		3.67	2.81	3.04
Std. Error		0.09	0.05		0.05	0.14		0.14		0.03
Sample Size		11	42	1	103	3		9	1	170

Continued-

Table 59. (p 2 of 2).

	Age Group									
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4	Total
All Periods Combined										
Males	41	1,953	6,556	153	18,842	497	236	1,432		29,710
Percent	0.06	2.86	9.60	0.22	27.60	0.73	0.35	2.10		43.52
Mean Length	555	586	528	631	596	535	610	609		580
Std. Error		5	2	20	2	12	8	6		1
Sample Size	1	38	99	3	343	7	5	21		517
Mean Weight		3.20	2.68	4.28	3.83	2.90	3.99	4.39		3.55
Std. Error		0.15	0.07		0.07	0.14		0.27		0.05
Sample Size		13	27	2	85	3	1	6		137
Females		3,138	5,416		27,734	71	471	1,657	71	38,558
Percent		4.60	7.93		40.63	0.10	0.69	2.43	0.10	56.48
Mean Length		554	510		560	520	591	574	570	553
Std. Error		3	2		1		14	4		1
Sample Size		53	80		485	1	10	25	1	655
Mean Weight		2.92	2.16		2.87		3.33	3.01	2.81	2.78
Std. Error		0.12	0.07		0.03		0.13	0.11		0.03
Sample Size		13	21		117		4	6	1	162
Both Sexes	41	5,091	11,972	153	46,576	568	707	3,089	71	68,268
Percent	0.06	7.46	17.54	0.22	68.23	0.83	1.04	4.52	0.10	100.00
Mean Length	555	566	520	631	575	533	597	590	570	565
Std. Error		3	2	20	1	12	11	4		1
Sample Size	1	91	179	3	828	8	15	46	1	1,172
Mean Weight		3.03	2.44	4.28	3.26	2.90	3.55	3.65	2.81	3.12
Std. Error		0.09	0.05		0.03	0.14	0.13	0.13		0.03
Sample Size		26	48	2	202	3	5	12	1	299

Table 60. Daily sockeye salmon escapement counts, Togiak Lake, 1989.

Date	Daily Count	Cumulative Count	Daily Percent of Total	Cumulative Percent
July 3	72	72	0.09	0.09
4	72	144	0.09	0.17
5	78	222	0.09	0.26
6	852	1,074	1.01	1.27
7	1,794	2,868	2.12	3.39
8	2,460	5,328	2.91	6.31
9	3,828	9,156	4.53	10.84
10	2,730	11,886	3.23	14.07
11	3,210	15,096	3.80	17.87
12	5,646	20,742	6.68	24.55
13	4,686	25,428	5.55	30.10
14	2,604	28,032	3.08	33.18
15	1,452	29,484	1.72	34.90
16	1,560	31,044	1.85	36.75
17	828	31,872	0.98	37.73
18	2,148	34,020	2.54	40.27
19	2,406	36,426	2.85	43.12
20	2,940	39,366	3.48	46.60
21	4,326	43,692	5.12	51.72
22	6,234	49,926	7.38	59.10
23	5,328	55,254	6.31	65.40
24	5,598	60,852	6.63	72.03
25	3,360	64,212	3.98	76.01
26	3,666	67,878	4.34	80.35
27	4,308	72,186	5.10	85.45
28	1,992	74,178	2.36	87.81
29	2,148	76,326	2.54	90.35
30	1,650	77,976	1.95	92.30
31	948	78,924	1.12	93.42
Aug 1	1,098	80,022	1.30	94.72
2	1,020	81,042	1.21	95.93
3	1,284	82,326	1.52	97.45
4	990	83,316	1.17	98.62
5	438	83,754	0.52	99.14
6	456	84,210	0.54	99.68
7	270	84,480	0.32	100.00

^a Based on aerial surveys, an additional 19,760 sockeye salmon escaped to Togiak River (15,200 in the mainstem below the tower and 4,560 in tributaries).

Table 61. Age, sex, and size composition of sockeye salmon escapement,
Togiak Lake, 1989.

	Age Group									
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	2.4	Total ^a
Sample Period 1: 3 - 20 July										
Males	88	177	2,824		9,444	530	177	2,118		15,358
Percent	0.22	0.45	7.17		23.99	1.35	0.45	5.38		39.01
Mean Length	503	601	527		600	504	615	599		582
Std. Error	15	4			3	24	10	6		2
Sample Size	1	2	32		107	6	2	24		174
Females	441	3,795			14,564	265	265	4,590	88	24,008
Percent	1.12	9.64			37.00	0.67	0.67	11.66	0.22	60.99
Mean Length	569	499			569	509	566	564	619	556
Std. Error	6	4			2	3	22	4		1
Sample Size	5	43			165	3	3	52	1	272
Both Sexes	88	618	6,619		24,008	795	442	6,708	88	39,366
Percent	0.22	1.57	16.81		60.99	2.02	1.12	17.04	0.22	100.00
Mean Length	503	578	511		581	506	586	575	619	566
Std. Error	6	3			1	16	14	3		1
Sample Size	1	7	75		272	9	5	76	1	446
Sample Period 2: 21 - 25 July										
Males	223	2,186	45	5,798	624	134	1,829	45	10,884	
Percent	0.90	8.80	0.18	23.34	2.51	0.54	7.36	0.18	43.81	
Mean Length	597	521	395	596	539	600	595	610	577	
Std. Error	5	4		2	7	21	4		2	
Sample Size	5	49	1	130	14	3	41	1	244	
Females	45	3,212		7,180	491	45	2,944	45	13,962	
Percent	0.18	12.93		28.90	1.98	0.18	11.85	0.18	56.19	
Mean Length	530	496		562	503	540	558	570	544	
Std. Error	3			2	4		3		2	
Sample Size	1	72		161	11	1	66	1	313	
Both Sexes	268	5,398	45	12,978	1,115	179	4,773	90	24,846	
Percent	1.08	21.73	0.18	52.23	4.49	0.72	19.21	0.36	100.00	
Mean Length	586	506	395	577	523	585	572	590	558	
Std. Error	5	3		2	4	21	3		1	
Sample Size	6	121	1	291	25	4	107	2	557	

-Continued-

Table 61. (p 2 of 2).

	Age Group									
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	2.4	Total ^a
Sample Period 3: 26 July - 7 August										
Males		2,215		47	4,479	283	141	754		7,919
Percent		10.93		0.23	22.10	1.40	0.70	3.72		39.07
Mean Length		529		370	603	544	617	608		580
Std. Error		4		3	12	7	5			2
Sample Size		47		1	95	6	3	16		168
Females		189	3,818		6,409	566	141	1,226		12,349
Percent		0.93	18.84		31.62	2.79	0.70	6.05		60.93
Mean Length		560	508		565	515	576	557		544
Std. Error		7	3		2	8	9	5		1
Sample Size		4	81		136	12	3	26		262
Both Sexes		189	6,033	47	10,888	849	282	1,980		20,268
Percent		0.93	29.77	0.23	53.72	4.19	1.39	9.77		100.00
Mean Length		560	515	370	581	525	596	576		558
Std. Error		7	2		2	6	6	4		1
Sample Size		4	128	1	231	18	6	42		430
All Periods Combined										
Males	88	400	7,225	92	19,721	1,437	452	4,701	45	34,161
Percent	0.10	0.47	8.55	0.11	23.34	1.70	0.54	5.56	0.05	40.44
Mean Length	503	599	525	382	599	527	611	598	610	580
Std. Error	7	2		2	10	8	3			1
Sample Size	1	7	128	2	332	26	8	81	1	586
Females		675	10,825		28,153	1,322	451	8,760	133	50,319
Percent		0.80	12.81		33.33	1.56	0.53	10.37	0.16	59.56
Mean Length		564	501		566	509	566	561	602	550
Std. Error		5	2		1	4	15	2		1
Sample Size		10	196		462	26	7	144	2	847
Both Sexes	88	1,075	18,050	92	47,874	2,759	903	13,461	178	84,480
Percent	0.10	1.27	21.37	0.11	56.67	3.27	1.07	15.93	0.21	100.00
Mean Length	503	577	511	382	580	519	589	574	604	562
Std. Error	4	2		1	5	8	2			1
Sample Size	1	17	324	2	794	52	15	225	3	1,433

^a An additional 19,760 sockeye salmon were estimated from aerial surveys to have spawned in Togiak River below the tower but were not sampled.

Table 62. Age, sex, and size composition of chinook salmon commercial catch,
Togiak River Section, Togiak District, 1989.

	Age Group				
	1.2	1.3	1.4	1.5	Total
All Periods Combined					
Males	585	2,384	2,428	173	5,570
Percent	6.32	25.76	26.23	1.87	60.18
Mean Length	542	711	834	885	752
Std. Error	9	8	10	34	5
Sample Size	27	110	112	8	257
Mean Weight	3.35	6.68	10.92	12.70	8.37
Std. Error	0.30	0.29	0.59	1.86	0.29
Sample Size	10	54	45	4	113
Females	43	542	2,905	195	3,685
Percent	0.46	5.86	31.39	2.11	39.82
Mean Length	960	807	850	892	847
Std. Error	39	13	5	17	4
Sample Size	2	25	134	9	170
Mean Weight		10.04	11.01	12.17	10.93
Std. Error		0.77	0.27	0.89	0.25
Sample Size		11	60	6	77
Both Sexes	628	2,926	5,333	368	9,255
Percent	6.79	31.62	57.62	3.98	100.00
Mean Length	571	729	843	889	790
Std. Error	9	7	5	18	4
Sample Size	29	135	246	17	427
Mean Weight	3.35	7.30	10.97	12.42	9.38
Std. Error	0.30	0.27	0.31	0.99	0.20
Sample Size	10	65	105	10	190

Table 63. Age, sex, and size composition of chum salmon commercial catch, Togiak River Section, Togiak District, 1989.

	Age Group				
	0.2	0.3	0.4	0.5	Total
All Periods Combined					
Males	22,905	37,629	6,077	66,611	
Percent	14.39	23.64	3.82	41.85	
Mean Length	575	620	628	605	
Std. Error	3	3	7	2	
Sample Size	98	161	26	285	
Mean Weight	3.35	4.44	4.17	4.04	
Std. Error	0.12	0.17	0.47	0.11	
Sample Size	31	36	5	72	
Females	234	39,032	49,316	3,973	92,555
Percent	0.15	24.52	30.98	2.50	58.15
Mean Length	540	558	586	604	575
Std. Error	2	2	6	1	
Sample Size	1	167	211	17	396
Mean Weight	2.76	3.24	3.77	3.06	
Std. Error	0.06	0.06	0.06	0.04	
Sample Size	43	51	5	99	
Both Sexes	234	61,937	86,945	10,050	159,166
Percent	0.15	38.91	54.63	6.31	100.00
Mean Length	540	564	601	619	588
Std. Error	2	2	5	1	
Sample Size	1	265	372	43	681
Mean Weight	2.98	3.76	4.01	3.47	
Std. Error	0.06	0.08	0.28	0.05	
Sample Size	74	87	10	171	

Table 64. Age, sex, and size composition of coho salmon sport harvest,
Togiak River, 1989.

	Age Group					
	1.1	1.2	2.1	2.2	3.1	Total
<u>Males</u>						
Percent	12.50	1.47	41.18	2.94	2.21	60.29
Mean Length	602	601	617	594	597	610
Std. Error	13	36	5	34	23	4
Sample Size	17	2	56	4	3	93
Mean Weight	4.29	4.30	4.66	4.43	4.23	4.52
Std. Error	0.03	0.02	0.01	0.09	0.04	0.01
Sample Size	16	2	55	3	3	90
<u>Females</u>						
Percent	8.09		30.15		0.74	38.97
Mean Length	582		601		598	598
Std. Error	13		5			5
Sample Size	11		41		1	56
Mean Weight	3.76		3.95		3.80	3.92
Std. Error	0.03		0.01			0.01
Sample Size	11		39		1	54
<u>All Fish</u>						
Percent	20.59	1.47	72.06	2.94	2.94	100.00
Mean Length	594	601	610	594	597	606
Std. Error	10	36	3	34	16	3
Sample Size	28	2	98	4	4	150
Mean Weight	4.08	4.30	4.36	4.43	4.13	4.29
Std. Error	0.02	0.02	0.01	0.09	0.03	0.01
Sample Size	27	2	95	3	4	145

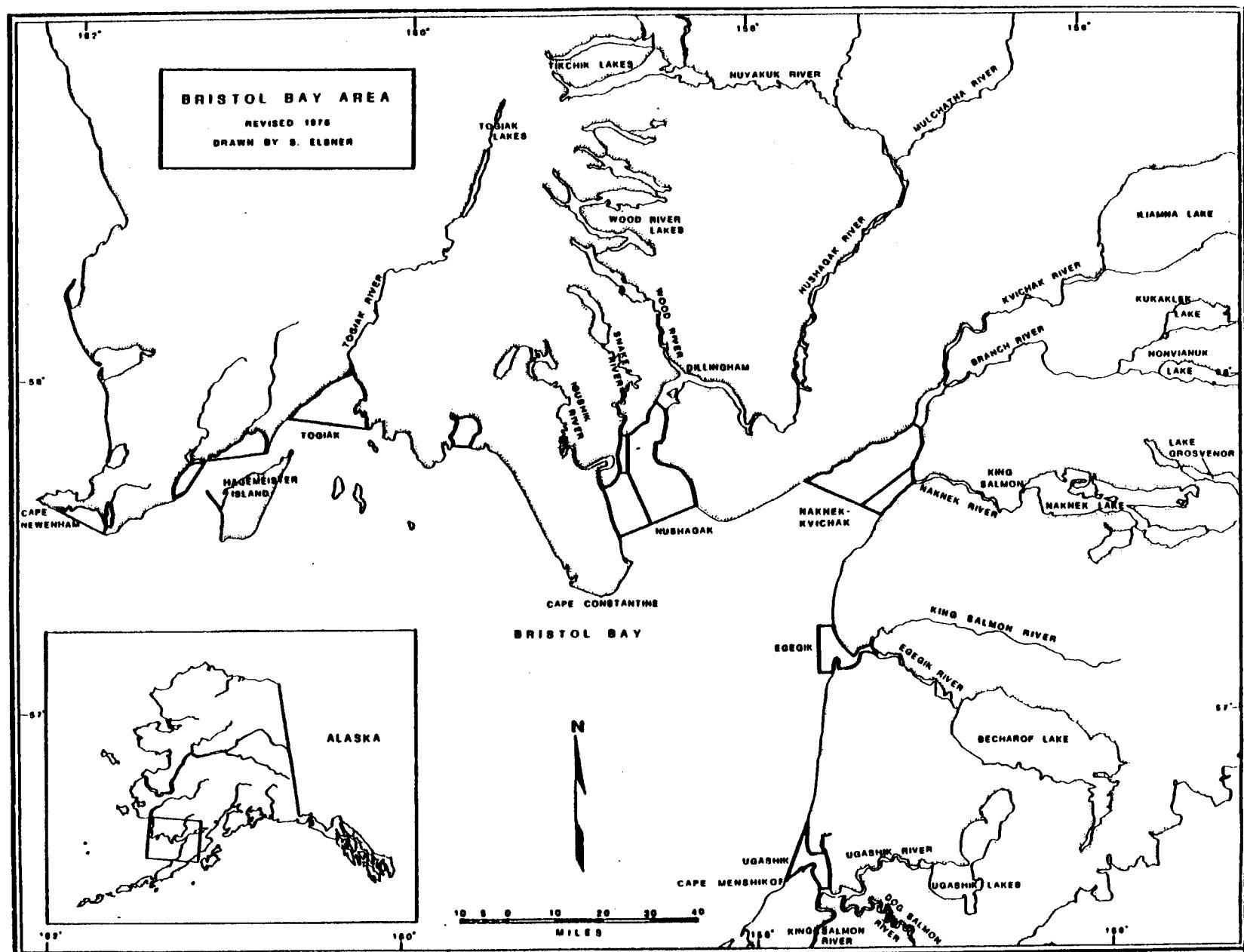


Figure 1. Bristol Bay major river systems and commercial fishing districts.

APPENDICES

Appendix A.1. Sockeye salmon catch by age group for the South Peninsula fishery in June, 1956 to 1989.

Year	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	Total
56	0	0	307	171421	0	207	46548	82096	0	28	28577	952	0	213	0	330349
57	1	1	336	7917	0	0	87928	34474	0	66	33151	27	54	267	0	164222
58	0	36	190	36837	1037	32	28739	35196	114	385	31617	521	58	238	0	135000
59	38	197	192	29043	100	0	5994	35686	0	34	5354	1760	17	48	0	78463
60	32	11	185	128250	443	3	11370	9057	35	4	6144	402	8	56	0	156000
61	5	34	275	5950	28	0	152839	79509	0	52	13874	291	149	810	184	254000
62	10	18	62	75129	267	0	30453	152907	11	681	66011	109	139	203	0	326000
63	238	173	961	42526	405	0	24870	40522	0	81	37484	1502	5	233	0	149000
64	61	253	244	125279	3850	3	34426	63010	11	12	14992	410	0	1449	0	244000
65	9	304	632	18089	88	0	44083	695203	0	13	16294	190	0	95	0	775000
66	5	0	597	44183	310	30	113657	100191	0	106	320250	1821	14	836	0	582000
67	39	393	690	28009	367	41	31611	141107	0	183	50488	735	37	1300	0	255000
68	219	2522	1351	219875	9894	82	119955	138031	75	575	77863	3320	41	1197	0	575000
69	1673	0	1120	517417	0	0	54813	245493	0	0	33770	1693	0	1021	0	857000
70	0	0	1071	142544	0	0	146131	1345170	0	0	43270	3209	0	1605	0	1683000
71	0	0	0	156994	0	0	221420	160930	0	0	61903	0	0	8753	0	610000
72	149	13	573	97941	0	4	118487	163039	0	866	135654	600	108	1566	0	519000
73	0	20	6452	12560	469	0	162010	8490	0	0	71680	0	0	319	0	262000
74	22	15	56	11015	327	28	7609	37375	0	101	3407	25	9	11	0	60000
75	27	49	336	15166	431	0	21930	170586	55	156	27209	2908	44	103	0	239000
76	48	20	1385	41578	148	0	68398	140307	23	91	39231	12724	43	3004	0	307000
77	58	425	1481	39827	100	158	44234	70983	0	78	79093	1809	10	744	0	239000
78	488	1708	366	257930	8370	111	119027	36942	0	3318	55531	1397	310	1502	0	487000
79	0	0	2289	315779	4043	0	70885	440145	0	0	28859	0	0	0	0	862000
80	4395	9350	0	586323	0	0	223607	2420379	0	0	56014	2932	0	0	0	3303000
81	15689	0	4303	338455	0	0	564765	674826	0	0	226962	0	0	0	0	1825000
82	0	0	3628	437003	0	0	1114939	177293	0	0	388137	0	0	0	0	2121000
83	0	0	4660	1084307	0	0	181247	583691	0	2052	102208	783	2052	0	0	1961000
84	210	168	12171	247255	0	0	216104	793385	0	1163	116074	980	490	0	0	1388000
85	130	0	15153	203265	4350	0	549464	669836	0	8469	252864	130	0	5339	0	1709000
86	822	0	11430	20242	58	0	138065	135689	0	642	158180	368	0	504	0	466000
87	790	0	30234	279448	195	881	260507	104860	0	4543	109610	1498	1687	606	0	794859
88	4458	0	5256	177541	3922	50	177386	314500	0	2000	71143	333	48	50	0	756687
89	5772	0	21439	135098	2368	175	232436	1083576	0	807	257670	1975	2527	662	0	1744505

Appendix A.2. Age, sex, and size composition of chinook salmon subsistence catch, Lewis Point, Nushagak River, 1989.

	Age Group					
	1.1	1.2	1.3	1.4	1.5	Total
All Periods Combined						
MALES						
Percent	2.72	16.10	26.30	4.54	49.66	
Mean Length	564	747	858	928	812	
Std. Error	46	7	8	23	6	
Sample Size	7	43	71	12	133	
Mean Weight	5.07	7.84	12.82	14.75	10.96	
Std. Error	2.57	0.46	0.90	1.60	0.54	
Sample Size	3	11	15	6	35	
FEMALES						
Percent	0.45	1.13	4.76	37.19	6.80	50.34
Mean Length	336	597	746	841	903	831
Std. Error		24	23	6	11	5
Sample Size	1	3	13	100	18	135
Mean Weight			6.70	10.92	12.73	10.76
Std. Error			2.00	0.34	0.97	0.35
Sample Size			2	32	8	42
BOTH SEXES						
Percent	0.45	3.85	20.86	63.49	11.34	100.00
Mean Length	336	574	747	848	913	822
Std. Error		33	8	5	11	4
Sample Size	1	10	56	171	30	268
Mean Weight		5.07	7.58	11.71	13.54	10.86
Std. Error		2.57	0.58	0.42	0.86	0.32
Sample Size		3	13	47	14	77

Appendix A.3. Commercial salmon catch by period and species, Kulukak Section, Togiak District, 1989.

Period ^a	Catch (number of fish)					Total
	Sockeye	Chinook	Chum	Pink	Coho	
6/08	8	2	13	0	0	23
6/12	106	13	120	0	0	239
6/13	113	29	51	0	0	193
6/14	357	34	260	0	0	651
6/15	199	7	92	0	0	298
6/19	500	84	863	0	0	1,447
6/20	839	98	955	0	0	1,892
6/21	779	42	1,272	0	0	2,093
6/22	697	51	801	0	0	1,549
6/26	949	197	1,219	0	0	2,365
6/27	801	103	820	2	0	1,726
6/28	794	134	1,365	0	0	2,293
6/29	495	53	873	0	0	1,421
7/10	1,469	97	4,684	7	0	6,257
7/11	2,276	71	2,627	10	0	4,984
7/12	2,470	79	2,749	1	0	5,299
7/13	948	28	918	0	0	1,894
8/08-8/10	40	8	139	0	1,158	1,337
8/14-8/17	60	4	45	3	4,106	4,218
8/21-8/24	23	3	10	0	7,022	7,058
8/29-8/31	22	0	0	0	1,994	2,016
9/04	0	0	0	0	22	22
Total	13,945	1,137	19,876	23	14,302	49,283
Percent	28.3	2.3	40.3	0.1	29.0	100.0

^a Kulukak Section open three days per week. See Table 2 for emergency order adjustments in the weekly fishing schedule.

Appendix A.4. Commercial salmon catch by period and species, Matogak Section, Togiak District, 1989.

Period ^a	Catch (number of fish)					Total
	Sockeye	Chinook	Chum	Pink	Coho	
6/16	87	9	294	0	0	390
6/17	6	6	96	0	0	108
6/19	18	9	298	0	0	325
6/28	581	42	5,831	0	0	6,454
6/29	845	51	3,454	0	0	4,350
6/30	597	40	2,485	0	0	3,122
7/01	206	9	306	0	0	521
7/14	1,193	10	3,580	0	0	4,783
7/15	511	4	1,432	0	0	1,947
7/24	180	4	704	0	0	888
7/25	308	5	559	4	7	883
7/26	68	1	95	0	0	164
7/27	296	2	405	0	3	706
8/08	2	0	6	0	32	40
8/08-8/10	42	1	31	0	256	330
8/14-8/17	72	3	35	0	1,925	2,035
8/21-8/22	2	0	0	0	378	380
9/05	1	0	0	0	6	7
Total	5,040	196	19,641	4	2,589	27,470
Percent	18.3	0.7	71.5	0.1	9.4	100.0

^a Matogak Section open five days per week. See Table 2 for emergency order adjustments in the weekly fishing period.

Appendix A.5. Commercial salmon catch by period and species, Osviak
Section, Togiak District, 1989.

Period ^a	Catch (number of fish)					Total
	Sockeye	Chinook	Chum	Pink	Coho	
6/13	9	118	254	0	0	381
6/14	16	45	194	0	0	255
6/15	16	38	141	0	0	195
6/16	24	74	213	0	0	311
6/17	4	32	90	0	0	126
6/19	40	132	130	0	0	302
6/20	92	246	453	0	0	791
6/21	112	136	218	0	0	466
6/22	71	136	218	0	0	425
6/23	41	27	91	0	0	159
6/26	11	1	0	0	0	12
6/30	122	7	298	0	0	427
7/24	284	13	1,198	2	5	1,502
7/25	311	8	815	3	8	1,145
7/26	4	0	14	0	0	18
8/09	1	0	3	0	54	58
8/14-8/16	30	1	39	1	1,342	1,413
8/22-8/24	10	2	2	0	1,682	1,696
8/30-8/31	0	0	0	0	1,158	1,158
Total	1,198	1,016	4,371	6	4,249	10,840
Percent	11.0	9.4	40.3	0.1	39.2	100.0

^a Osviak Section open five days per week. See Table 2 for emergency order adjustments in the weekly fishing period.

Appendix A.6. Kvichak River sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)															Total
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1950	a	-b	-	-	-	-	-	-	-	0	274	0	0	0	0	0	274 ^c
1951	a	-	-	-	-	-	0	245	3717	0	0	983	0	1	0	0	4946 ^c
1952	a	-	-	0	10955	0	0	6681	2956	0	0	654	1	0	1	0	21249 ^c
1953	a	0	0	0	91	0	0	62	365	0	0	60	0	0	0	16	593
1954	a	0	0	0	81	17	0	29	643	0	0	0	0	0	29	0	799
1955	a	0	0	0	251	14	0	101	589	0	0	531	20	0	0	0	1504
1956	9443	0	14	0	24280	0	0	6960	6465	0	0	1308	0	0	0	0	39027
1957	2843	8	0	0	243	0	0	244	3333	0	2	259	0	0	2	0	4090
1958	535	0	0	0	76	0	0	48	135	0	0	26	0	0	3	0	289
1959	680	0	0	0	212	1	0	117	206	0	0	11	0	0	0	0	546
1960	14630	0	0	1	1314	134	0	563	46743	0	0	6483	10	0	6	0	55255
1961	3706	1	0	0	334	0	0	190	2293	0	0	679	5	0	0	0	3502
1962	2581	0	0	0	104	2	0	152	4673	0	0	408	12	0	4	0	5356
1963	339	0	0	1	49	3	0	50	639	0	0	366	3	0	9	0	1120
1964	957	0	8	0	2232	105	0	407	2341	0	0	647	8	0	3	0	5751
1965	24326	0	25	0	9853	484	0	471	32950	0	0	1238	2	0	1	0	45024
1966	3775	4	11	6	497	11	0	1086	4261	0	0	385	0	1	0	0	6261
1967	3216	0	0	5	349	2	0	272	812	0	0	86	0	0	0	0	1527
1968	2557	0	0	0	293	0	0	34	77	0	5	132	0	0	2	0	543
1969	8394	0	0	1	129	7	0	321	4221	0	0	594	19	0	11	0	5303
1970	13935	0	1	0	43	40	0	13	14462	6	0	849	412	0	7	0	15833
1971	2387	0	0	0	244	18	0	93	2170	0	0	303	2	0	0	0	2830
1972	1010	0	0	0	255	1	0	159	1206	0	22	297	0	0	0	0	1941
1973	227	0	0	2	576	2	2	1028	274	0	4	543	28	0	0	0	2457
1974	4434	0	9	1	6328	309	0	2009	16726	0	12	880	23	0	5	0	26302
1975	13140	0	5	0	5682	302	0	1198	30234	0	0	623	2	0	0	0	38047
1976	1965	0	5	12	5319	43	0	816	4110	0	4	273	0	0	0	0	10582
1977	1341	11	43	5	1932	2	0	935	208	0	0	99	0	0	0	0	3237
1978	4149	0	0	0	1835	16	0	1157	1318	0	0	817	11	0	6	0	5160
1979	11218	1	57	3	18331	73	0	2233	17931	0	0	3512	0	0	0	0	42141
1980	22505	0	2	5	2889	20	0	1641	8076	0	2	413	0	0	0	0	13047
1981	1754	0	0	12	789	0	0	230	931	0	0	166	0	0	0	0	2128
1982	1135	25	0	2	445	1	0	542	523	0	6	140	0	0	0	-	1682 ^c
1983	3570	0	1	5	8575	3	0	3035	1204	0	5	576	0	-	-	-	13404 ^c
1984	10491	0	0	4	2549	44	1	1930	17000	0	-	-	-	-	-	-	21529 ^c
1985	7211	4	7	30	1027	29	-	-	-	-	-	-	-	-	-	-	1096 ^c
1986	1179	10	0	-	-	-	-	-	-	-	-	-	-	-	-	10 ^c	

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

Appendix A.7. Branch River sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)															Total
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1950	a	-b	-	-	-	-	-	-	-	-	0	290	0	0	0	0	290 ^c
1951	a	-	-	-	-	-	0	325	378	0	0	43	0	0	0	0	747 ^c
1952	a	-	-	0	422	0	0	295	131	0	0	115	0	0	1	0	963 ^c
1953	a	0	0	0	5	0	0	11	64	0	0	0	0	0	0	0	80
1954	a	0	0	0	14	3	0	109	392	0	0	141	0	0	1	0	661
1955	a	0	0	0	788	0	0	237	26	0	0	44	0	0	0	0	1095
1956	784	5	0	0	1885	0	0	458	0	0	0	38	3	0	0	0	2390
1957	127	0	0	0	5	0	0	23	43	0	0	13	0	0	1	0	85
1958	95	0	0	0	43	0	0	26	27	0	0	52	0	0	0	0	147
1959	825	0	0	0	301	0	0	265	122	0	0	76	1	0	2	0	767
1960	1241	0	0	0	105	0	0	185	135	0	0	31	0	0	0	0	456
1961	90	0	10	1	89	1	0	185	7	0	0	0	0	0	0	0	292
1962	91	0	19	0	129	0	0	92	3	0	0	19	1	0	0	0	262
1963	203	0	0	0	199	1	0	140	34	0	0	1	0	0	0	0	376
1964	249	0	5	0	100	2	0	98	113	0	0	17	0	0	0	0	336
1965	175	0	6	0	104	1	0	161	10	0	0	17	0	0	0	0	299
1966	174	0	13	0	282	0	0	262	12	0	0	11	0	0	0	0	581
1967	203	0	9	8	291	1	0	51	46	0	0	7	0	0	0	0	414
1968	194	3	5	0	127	0	0	40	2	0	0	3	0	0	0	0	180
1969	182	0	0	0	4	1	0	54	105	0	0	25	0	0	0	0	190
1970	177	0	0	0	73	0	0	71	6	0	0	2	0	0	0	0	153
1971	187	0	2	0	26	0	0	28	31	0	0	37	0	0	2	0	126
1972	151	0	1	0	91	0	0	17	7	0	0	14	0	0	0	0	130
1973	35	0	0	0	97	1	0	130	18	0	0	2	0	0	0	0	248
1974	215	0	4	0	292	5	0	18	128	0	0	9	0	0	0	0	457
1975	100	0	15	0	415	0	0	330	3	0	1	1	0	0	0	0	765
1976	82	0	26	0	212	0	0	166	20	0	0	55	0	0	0	0	480
1977	100	0	27	0	141	1	0	700	0	0	4	9	0	0	0	0	881
1978	229	0	1	0	102	0	0	68	39	0	0	147	0	0	0	0	358
1979	294	0	3	2	459	2	0	297	32	0	0	3	0	0	0	0	799
1980	298	0	0	0	103	0	0	211	13	0	2	9	0	1	0	0	339
1981	82	0	0	0	55	0	0	171	53	0	2	11	0	0	0	0	291
1982	239	0	0	0	172	0	0	141	4	0	0	3	0	0	0	-	321 ^c
1983	96	0	0	0	148	0	0	132	33	0	0	3	0	-	-	-	317 ^c
1984	215	0	1	0	160	0	0	146	42	0	-	-	-	-	-	-	350 ^c
1985	118	0	3	0	358	0	-	-	-	-	-	-	-	-	-	-	362 ^c
1986	230	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1 ^c

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

Appendix A.8. Naknek River sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)															Total
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1950	a	- ^b	-	-	-	-	-	-	-	-	0	1211	0	2	5	0	1218 ^c
1951	a	-	-	-	-	-	0	1435	757	0	0	1250	0	1	0	0	3443 ^c
1952	a	-	-	0	87	0	0	1199	108	0	7	176	1	0	2	0	1579 ^c
1953	a	0	0	0	24	0	0	135	177	3	0	206	42	0	1	1	589
1954	a	0	0	0	85	19	0	302	2129	0	0	587	0	13	3	0	3138
1955	a	0	0	0	720	1	0	821	214	0	0	88	2	4	2	0	1852
1956	1773	0	1	0	474	0	0	1700	3	0	17	304	0	0	0	0	2499
1957	635	0	0	0	53	2	0	329	505	0	1	673	5	0	3	0	1569
1958	278	0	0	0	112	4	0	211	538	0	0	168	3	0	2	0	1039
1959	2232	0	0	0	349	7	0	351	742	0	0	704	0	0	0	0	2153
1960	828	0	1	1	1408	9	0	626	696	0	0	1278	1	1	2	0	4023
1961	351	0	0	0	239	3	0	745	315	0	3	639	0	0	8	0	1953
1962	723	0	0	0	76	4	0	230	351	0	2	397	13	0	1	0	1074
1963	905	0	0	0	136	8	0	390	833	0	0	627	7	0	1	0	2002
1964	1350	0	1	0	447	24	0	264	1135	0	0	177	11	0	1	0	2061
1965	718	0	5	0	540	44	0	361	732	0	0	437	1	0	1	0	2121
1966	1016	1	4	0	728	2	0	2305	167	0	1	629	0	1	0	0	3838
1967	756	0	0	2	326	6	0	625	401	0	0	356	0	1	0	0	1717
1968	1023	0	3	0	152	0	0	234	83	0	0	269	2	0	2	0	745
1969	1331	0	0	0	47	3	0	308	976	0	0	1209	5	0	3	0	2550
1970	733	0	1	0	154	19	0	318	1845	0	0	370	12	0	0	0	2719
1971	936	0	1	0	398	24	0	559	1428	0	0	1844	3	9	8	0	4274
1972	587	0	3	0	245	3	0	241	161	0	3	598	9	0	1	0	1264
1973	357	0	0	0	494	0	0	618	524	0	0	598	0	0	0	0	2235
1974	1241	0	2	0	232	3	0	228	1026	0	2	904	5	0	5	0	2407
1975	2027	0	1	0	425	11	0	1697	1392	0	0	1706	1	8	0	0	5242
1976	1321	0	4	0	1088	3	0	4000	1573	0	21	1492	0	28	1	0	8210
1977	1086	2	10	7	634	0	0	2272	95	0	64	401	0	1	5	0	3492
1978	813	0	1	0	331	4	0	1695	1121	0	11	530	2	0	0	0	3694
1979	925	0	4	1	2438	4	0	973	793	0	9	408	4	0	3	0	4637
1980	2645	0	1	1	723	14	0	1504	1192	0	9	828	0	2	0	0	4273
1981	1796	0	4	0	782	9	0	2567	472	0	12	933	0	3	0	0	4783
1982	1156	0	3	3	185	0	0	1167	191	0	23	461	0	9	0	-	2041 ^c
1983	888	0	0	1	163	7	0	488	338	0	5	482	0	-	-	-	1484 ^c
1984	1242	0	1	0	472	23	0	915	1217	0	-	-	-	-	-	-	2628 ^c
1985	1850	0	2	6	658	20	-	-	-	-	-	-	-	-	-	-	686 ^c
1986	1978	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	3 ^c

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

Appendix A.9. Egegik River sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)															Total
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1949	a	b	-	-	-	-	-	-	-	0	0	0	0	0	15	0	15 ^c
1950	a	-	-	-	-	-	0	0	0	0	0	304	77	4	23	0	407 ^c
1951	a	-	-	0	0	0	0	360	1120	0	1	1301	2	0	6	0	2791 ^c
1952	a	0	0	0	685	0	0	446	241	0	1	295	19	2	5	0	1695
1953	a	0	0	0	26	0	0	39	435	2	0	337	254	0	12	0	1104
1954	a	0	0	0	11	4	0	13	1190	0	0	641	87	0	45	0	1991
1955	a	0	1	0	20	0	0	163	672	0	0	396	6	1	6	0	1265
1956	1104	0	6	0	2025	0	0	3186	924	0	2	685	1	0	12	0	6841
1957	391	0	0	0	37	0	0	43	1096	0	0	926	70	0	62	0	2235
1958	246	0	0	0	42	2	0	73	817	0	0	308	16	0	3	0	1262
1959	1072	0	0	0	73	2	0	164	1037	0	0	467	14	0	24	0	1782
1960	1799	8	0	0	447	21	0	328	4447	0	1	2559	49	0	50	0	7912
1961	702	0	0	3	82	0	0	230	446	0	1	790	28	0	10	0	1590
1962	1027	0	0	0	22	0	0	69	950	0	0	375	28	0	30	0	1475
1963	998	0	0	1	16	2	0	112	538	1	1	506	74	0	7	0	1258
1964	850	0	1	0	126	6	0	69	1454	1	0	242	73	0	12	0	1983
1965	1445	0	0	0	104	35	0	72	2016	0	4	844	6	2	20	0	3102
1966	804	0	0	1	249	0	0	752	600	0	2	889	7	0	10	0	2511
1967	637	0	0	2	60	2	0	257	665	0	0	622	1	1	2	0	1613
1968	339	0	0	0	41	0	0	56	87	0	0	258	3	5	9	0	458
1969	1016	0	0	0	12	1	0	111	1096	0	0	1139	279	2	113	0	2754
1970	920	0	0	0	59	0	0	89	796	0	1	175	95	0	25	0	1240
1971	634	0	0	0	45	2	0	109	1477	0	0	970	74	1	55	0	2732
1972	546	0	0	1	57	2	0	61	1508	0	0	1263	48	0	18	0	2958
1973	329	0	0	0	76	0	0	135	578	0	0	851	35	0	4	0	1679
1974	1276	0	0	0	131	18	0	99	2225	0	0	573	54	0	3	0	3102
1975	1174	0	0	0	148	9	0	234	2447	2	0	828	14	2	1	0	3686
1976	509	1	1	2	615	59	0	780	2999	0	4	846	0	0	0	0	5307
1977	693	0	2	0	822	1	0	1969	688	0	14	655	52	0	13	0	4216
1978	896	0	0	2	398	6	0	510	6071	0	0	2183	25	4	8	0	9208
1979	1032	0	3	0	712	9	3	519	3036	0	4	1659	0	0	0	0	5947
1980	1061	0	1	13	803	26	0	2224	4576	0	6	939	7	0	0	0	8597
1981	695	0	0	6	544	64	0	981	3368	0	11	1445	9	0	7	0	6436
1982	1035	2	2	4	1013	12	0	1883	1804	0	9	1625	11	2	2	-	6369 ^c
1983	792	0	3	0	1756	7	1	2742	3214	0	7	2773	21	-	-	-	10524 ^c
1984	1165	0	1	8	604	85	0	958	6411	3	-	-	-	-	-	-	8069 ^c
1985	1095	4	0	9	555	32	-	-	-	-	-	-	-	-	-	-	600 ^c
1986	1151	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2 ^c

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

Appendix A.10. Ugashik River sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)															Total
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1949	a	- ^b	-	-	-	-	-	-	-	-	0	0	0	0	2	0	2 ^c
1950	a	-	-	-	-	-	0	0	0	0	1	50	0	0	3	0	54 ^c
1951	a	-	-	0	0	0	1	52	191	0	2	118	1	0	0	0	364 ^c
1952	a	0	0	1	559	0	0	391	209	0	0	78	2	0	0	0	1240
1953	a	0	0	0	216	0	0	249	420	0	0	216	7	0	0	0	1108
1954	a	0	0	0	24	3	0	28	395	0	0	61	0	0	0	0	511
1955	a	0	0	1	17	1	0	33	118	0	0	7	0	0	0	0	177
1956	425	1	12	0	3166	0	0	836	80	0	2	35	0	0	0	0	4132
1957	215	0	0	3	35	0	0	105	354	0	2	100	4	0	2	0	604
1958	280	0	0	0	63	0	0	105	444	0	0	66	0	0	0	0	679
1959	219	0	0	0	18	0	0	38	310	0	0	132	0	0	1	0	497
1960	2304	0	0	0	674	11	0	296	1563	0	0	487	0	0	0	0	3032
1961	349	0	0	3	240	2	0	500	247	0	1	119	0	0	0	0	1113
1962	255	0	0	2	77	2	0	130	185	0	0	27	0	0	0	0	424
1963	388	0	0	0	13	0	0	21	91	0	0	23	0	0	0	0	148
1964	473	0	0	0	31	9	0	16	245	0	0	18	0	0	2	0	324
1965	997	0	0	0	86	2	0	38	249	0	1	162	1	0	0	0	538
1966	704	1	0	2	724	0	0	1478	90	0	0	21	0	0	0	0	2316
1967	239	0	0	0	56	0	0	50	44	0	0	34	0	0	0	0	184
1968	71	0	0	0	14	0	0	7	15	0	0	3	0	0	0	0	40
1969	160	0	0	0	4	0	0	5	53	0	0	26	2	0	2	0	92
1970	735	0	0	0	4	1	0	2	256	0	1	27	2	0	1	0	294
1971	530	0	0	0	178	0	0	229	282	0	0	130	0	0	1	0	821
1972	79	0	0	0	34	0	0	58	119	0	0	36	2	0	3	0	252
1973	39	0	0	1	16	0	0	7	15	0	0	46	4	0	0	0	89
1974	62	0	0	0	11	9	0	15	600	0	0	95	2	0	0	0	732
1975	429	0	3	0	1479	4	0	557	1713	0	0	338	2	1	0	0	4098
1976	342	0	0	2	2028	58	0	1508	1246	0	7	431	0	0	3	0	5284
1977	201	0	2	18	585	0	0	1595	263	0	10	186	6	1	4	0	2671
1978	70	0	0	5	244	7	0	413	863	0	6	521	1	0	0	0	2058
1979	1701	0	19	0	3075	8	0	847	1457	0	14	561	0	5	0	0	5986
1980	3321	0	1	13	1173	38	0	2307	3367	0	10	837	3	2	0	0	7751
1981	1327	0	2	10	1601	4	0	2593	2244	0	4	925	1	1	0	0	7386
1982	1158	0	1	14	417	1	1	707	600	0	9	736	0	2	0	-	2489 ^c
1983	1001	0	0	10	642	6	1	342	631	0	3	321	1	-	-	-	1957 ^c
1984	1241	0	0	5	471	54	0	568	3643	0	-	-	-	-	-	-	4741 ^c
1985	998	2	1	6	506	2	-	-	-	-	-	-	-	-	-	-	517 ^c
1986	1001	5	0	-	-	-	-	-	-	-	-	-	-	-	-	-	5 ^c

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

Appendix A.11. Wood River sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)															Total
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1950	a	b	-	-	-	-	-	-	-	-	1	64	0	0	0	0	64 ^c
1951	a	-	-	-	-	-	0	505	319	0	3	54	0	0	1	0	881 ^c
1952	a	-	-	0	759	0	0	558	29	0	2	34	0	0	0	0	1383 ^c
1953	a	0	0	0	301	0	0	331	139	0	2	34	0	0	1	0	809
1954	a	0	0	0	1237	0	0	140	1085	0	1	67	0	0	0	0	2529
1955	a	0	0	0	2407	0	0	834	401	0	5	143	0	0	0	0	3790
1956	773	0	0	48	774	0	0	626	24	0	0	0	0	0	0	0	1472
1957	289	0	0	40	136	0	0	257	35	0	0	0	0	0	0	0	469
1958	960	0	1	0	2145	1	0	388	75	0	0	32	0	0	0	0	2642
1959	2209	0	0	1	978	10	0	398	359	0	1	55	0	0	2	0	1803
1960	1016	0	6	0	1473	0	0	1040	106	0	2	105	1	0	0	0	2733
1961	461	0	0	10	255	0	0	1184	24	0	2	20	0	1	1	0	1497
1962	874	1	2	0	992	1	2	341	116	0	6	43	0	0	0	0	1504
1963	721	0	0	0	536	1	0	769	76	0	0	46	0	0	0	0	1427
1964	1076	0	1	6	452	0	0	347	338	0	0	74	0	0	2	0	1219
1965	675	2	1	8	472	1	0	1000	90	0	0	213	0	0	1	0	1787
1966	1209	0	7	29	975	0	0	988	46	0	7	69	0	0	1	0	2122
1967	516	0	3	21	642	0	0	269	75	0	2	80	0	0	0	0	1091
1968	649	0	1	0	514	0	0	565	5	0	4	19	0	0	0	0	1108
1969	604	0	0	4	57	0	0	445	201	0	10	116	0	0	0	0	834
1970	1162	0	2	0	1539	0	0	1004	231	0	0	26	0	0	0	0	2801
1971	851	3	0	19	456	0	0	576	198	0	1	49	0	0	0	0	1302
1972	431	2	1	22	779	0	0	631	32	0	19	27	0	0	0	0	1514
1973	330	1	1	0	213	0	0	1149	74	0	3	44	0	0	0	0	1485
1974	1709	0	3	6	2956	4	0	1698	421	0	8	82	0	0	0	0	5177
1975	1270	13	47	13	1591	2	0	1922	406	0	2	763	0	0	0	0	4759
1976	817	0	3	0	2287	3	0	2558	571	0	10	265	0	0	0	0	5698
1977	562	0	20	0	1028	0	0	2173	40	0	0	26	2	0	0	0	3288
1978	2267	0	0	0	1364	3	0	1029	784	0	12	96	0	0	0	0	3288
1979	1706	0	10	0	2643	0	0	1490	24	0	1	13	0	0	0	0	4181
1980	2969	0	0	0	453	0	0	978	72	0	1	101	0	0	0	0	1606
1981	1233	0	0	0	626	0	0	1137	60	0	0	86	0	0	0	0	1909
1982	976	0	4	0	522	0	0	765	121	0	12	14	0	0	0	-	1438 ^c
1983	1361	0	1	5	1940	0	2	1154	15	0	2	75	0	-	-	-	3195 ^c
1984	1003	0	0	0	586	0	2	1359	32	0	-	-	-	-	-	-	1979 ^c
1985	939	8	3	15	1140	0	-	-	-	-	-	-	-	-	-	-	1166 ^c
1986	819	7	2	-	-	-	-	-	-	-	-	-	-	-	-	9 ^c	

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

Appendix A.12. Igushik River sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)															Total
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1950	a	b	-	-	-	-	-	-	-	-	1	86	0	0	0	0	87 ^c
1951	a	-	-	-	-	-	0	681	68	0	1	29	0	0	2	0	782 ^c
1952	a	-	-	0	162	0	0	303	9	0	5	73	0	0	0	0	553 ^c
1953	a	0	0	0	98	0	0	1	20	0	3	65	0	0	1	0	187
1954	a	0	0	0	175	0	0	269	204	0	0	113	0	1	0	0	763
1955	a	0	0	0	454	0	0	783	113	0	0	94	0	0	0	0	1444
1956	400	0	0	0	169	0	0	522	12	0	3	36	0	0	0	0	742
1957	130	0	0	0	2	0	0	35	19	0	0	20	0	0	0	0	76
1958	107	0	0	1	14	0	0	71	20	0	0	28	0	0	0	0	133
1959	644	0	0	0	101	0	0	155	93	0	0	22	0	0	0	0	372
1960	495	0	0	1	61	0	0	310	44	0	0	57	0	0	0	0	474
1961	294	0	0	1	33	0	1	365	20	0	0	17	0	0	0	0	438
1962	16	0	0	8	20	0	0	281	9	0	0	9	0	0	0	0	327
1963	92	0	0	3	254	0	0	190	36	0	0	25	0	0	0	0	508
1964	129	0	0	1	162	0	0	586	133	0	0	49	0	0	0	0	931
1965	181	0	0	0	371	0	0	436	203	0	0	79	0	0	0	0	1089
1966	206	0	0	0	66	0	0	384	6	0	0	15	0	0	0	0	471
1967	282	0	0	3	57	0	0	91	13	0	0	12	0	0	0	0	175
1968	195	0	0	0	43	0	0	120	0	0	2	10	0	0	0	0	176
1969	512	0	0	0	1	0	0	131	301	0	2	103	0	0	0	0	536
1970	371	0	0	1	26	0	0	171	41	0	0	71	0	0	0	0	309
1971	211	0	0	1	48	0	0	164	60	0	0	30	0	0	0	0	303
1972	60	0	0	4	89	0	0	109	6	0	8	13	0	0	0	0	229
1973	60	0	0	0	19	0	0	651	25	0	2	29	0	0	0	0	726
1974	359	0	0	7	441	1	0	750	346	0	7	29	0	0	0	0	1580
1975	241	0	0	0	783	0	0	2485	137	0	1	523	0	0	0	0	3929
1976	186	0	0	0	553	3	0	1394	193	0	20	215	0	0	0	0	2379
1977	96	0	0	6	294	0	0	1689	9	0	8	9	0	0	0	0	2014
1978	536	0	0	0	96	0	0	330	84	0	1	15	0	0	0	0	527
1979	860	0	0	0	422	0	0	406	13	0	0	5	0	0	0	0	846
1980	1988	0	0	0	20	0	0	271	25	0	0	56	0	0	0	0	373
1981	591	0	0	0	188	0	0	779	8	0	1	49	0	0	0	0	1025
1982	424	0	0	7	57	0	0	434	9	0	2	10	0	0	0	0	518 ^c
1983	180	1	0	0	151	0	0	353	8	0	2	30	0	-	-	-	545 ^c
1984	185	0	0	0	41	0	0	651	57	0	-	-	-	-	-	-	749 ^c
1985	212	0	0	7	523	0	-	-	-	-	-	-	-	-	-	-	530 ^c
1986	308	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	3 ^c

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

Appendix A.13. Nuyakuk River sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)															Total
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1950	a	- ^b	-	-	-	-	-	-	-	-	0	8	0	0	0	0	8 ^c
1951	a	-	-	-	-	-	0	61	3	0	1	14	0	0	1	0	80 ^c
1952	a	-	-	0	7	0	0	150	5	0	3	43	0	0	0	0	208 ^c
1953	a	0	0	0	55	0	0	427	6	0	0	1	0	0	0	0	489
1954	a	0	0	0	53	0	0	4	23	0	0	0	0	0	0	0	80
1955	a	0	0	0	52	0	0	10	10	0	0	0	0	0	0	0	72
1956	30	0	0	0	217	0	0	162	0	0	0	0	0	0	0	0	379
1957	67	0	0	0	4	0	0	11	2	0	0	1	0	0	0	0	18
1958	196	0	0	0	93	0	0	307	31	0	0	11	0	0	0	0	443
1959	49	0	0	60	11	0	0	57	3	0	0	9	0	0	0	0	140
1960	146	5	0	8	147	0	0	380	23	0	0	12	0	0	0	0	575
1961	80	1	0	37	37	0	0	317	2	0	0	0	0	0	0	0	394
1962	38	0	0	4	17	0	0	36	0	0	0	2	0	0	0	0	59
1963	167	0	0	26	4	0	0	194	2	0	0	6	0	0	0	0	232
1964	103	2	0	1	17	0	0	51	14	0	0	2	0	0	0	0	86
1965	203	0	0	7	72	0	0	603	36	0	7	54	0	0	0	0	779
1966	161	1	0	2	121	0	0	527	4	0	2	5	0	0	0	0	663
1967	20	0	1	2	9	0	0	64	0	0	0	6	0	0	0	0	83
1968	97	0	0	8	12	0	0	210	0	0	1	6	0	0	0	0	238
1969	70	2	0	23	5	0	1	81	13	0	4	6	0	0	0	0	134
1970	365	0	0	1	98	0	0	717	160	0	1	92	0	0	0	0	1070
1971	224	1	0	17	87	0	0	785	28	0	0	41	0	1	0	0	959
1972	29	0	0	11	49	0	0	295	14	0	47	120	0	0	0	0	535
1973	110	0	0	4	47	0	3	1100	2	0	1	1	0	0	0	0	1156
1974	155	0	0	0	117	0	0	249	7	0	0	0	0	0	0	0	373
1975	670	7	0	3	528	0	0	4369	127	0	4	253	0	1	0	0	5291
1976	425	2	1	38	399	0	0	2905	58	0	22	254	0	0	0	0	3678
1977	233	0	0	16	325	0	3	1936	3	0	99	10	1	0	0	0	2393
1978	577	0	0	0	100	0	21	779	7	0	1	6	0	1	0	0	914
1979	360	0	1	89	441	0	0	854	6	0	14	5	0	0	0	0	1411
1980	3027	3	0	0	84	0	0	344	162	0	4	154	0	0	0	0	752
1981	834	0	0	52	150	0	2	1476	2	0	25	17	0	0	0	-	1724 ^c
1982	538	14	0	67	114	0	49	299	2	0	9	6	0	-	-	-	560 ^c
1983	319	7	0	110	114	0	13	553	2	0	-	-	-	-	-	-	798 ^c
1984	473	0	0	17	50	0	-	-	-	-	-	-	-	-	-	-	67 ^c
1985	429	12	0	-	-	-	-	-	-	-	-	-	-	-	-	-	12 ^c

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

Appendix A.14. Snake River sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)														Total	
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1951	a	- ^b	-	-	-	-	0	2	2	0	0	1	0	0	0	0	5 ^c
1952	a	-	-	-	4	0	0	6	0	0	0	0	0	0	0	0	10 ^c
1953	a	-	-	0	3	0	0	3	1	0	0	2	0	0	0	0	10 ^c
1954	a	0	0	0	12	0	0	9	69	0	0	0	0	0	0	0	90
1955	a	0	0	0	153	0	0	0	0	0	0	0	0	0	0	0	153
1958	9	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3
1959	140	0	0	0	68	0	0	7	6	0	0	1	0	0	0	0	83
1960	17	0	0	0	14	0	0	18	1	0	0	0	0	0	0	0	33
1961	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5
1971	9	0	0	0	0	0	0	2	17	1	0	3	0	0	0	0	24
1972	2	0	0	0	6	0	0	1	0	0	0	0	0	0	0	0	8
1973	1	0	0	0	8	0	0	3	5	0	0	1	0	0	0	0	16
1974	15	0	0	0	26	0	0	7	1	0	0	0	0	0	0	0	34
1975	10	0	0	0	10	0	0	0	0	0	0	13	0	0	0	0	23
1976	13	0	0	0	0	0	0	22	6	0	0	0	0	0	0	0	28
1977	9	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	16

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

Appendix A.15. Nushagak-Mulchatna Rivers sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)															Total
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1951	a	- ^b	-	-	-	-	16	0	0	0	0	0	0	0	0	0	16 ^c
1952	a	-	-	24	0	0	0	0	0	0	0	0	0	0	0	0	24 ^c
1953	a	0	0	37	0	0	2	0	0	0	0	0	0	0	0	0	39
1954	a	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
1955	a	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	33
1962	9	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
1963	46	0	0	0	0	0	1	53	0	0	0	2	0	0	0	0	56
1964	19	0	0	13	4	0	0	12	2	0	0	0	0	0	0	0	32
1965	28	1	0	13	16	0	0	91	0	0	0	0	0	0	0	0	120
1966	50	2	0	29	0	0	0	0	0	0	0	0	0	0	0	0	31
1967	47	1	0	0	0	0	0	0	0	0	4	3	0	0	0	0	8
1968	32	0	0	0	0	0	0	8	79	0	0	5	4	0	0	0	95
1969	17	0	0	90	0	0	5	2	2	0	0	0	0	0	0	0	100
1970	45	1	0	9	10	1	0	0	0	0	1	6	0	0	0	0	26
1971	58	0	0	0	0	0	0	78	2	0	0	125	0	0	0	0	206
1972	7	0	0	20	7	0	7	291	27	0	0	0	0	0	0	0	351
1973	80	0	0	51	44	0	0	0	0	0	0	0	0	0	0	0	96
1974	30	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1976	45	0	0	0	0	0	0	0	0	0	16	28	0	0	0	0	44
1977	320	0	0	0	0	0	63	10	0	0	36	1	0	0	0	0	110
1978	87	0	0	436	0	0	128	0	13	0	0	0	0	0	0	0	577
1979	138	18	0	376	53	0	16	0	0	0	28	0	0	0	0	0	491
1980	291	16	0	447	0	0	67	0	0	0	0	1	0	0	0	0	532
1981	177	9	0	86	20	0	12	0	0	0	61	14	0	0	0	0	204
1982	63	21	0	284	49	0	0	595	0	0	52	1	0	0	0	-	1004 ^c
1983	85	93	0	498	0	0	109	0	4	0	16	-	-	-	-	-	721 ^c
1984	120	10	0	209	1	0	-	-	-	-	-	-	-	-	-	-	220 ^c
1985	69	56	0	-	-	-	-	-	-	-	-	-	-	-	-	-	56 ^c

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

Appendix A.16. Nushagak River drainage sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)														Total	
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1982	601	35	0	351	163	0	49	894	2	0	61	7	0	0	0	- ^a	1564 ^b
1983	404	100	0	608	114	0	122	553	6	0	16	3	0	-	-	-	1522 ^b
1984	593	10	0	226	51	0	32	574	2	0	-	-	-	-	-	-	895 ^b
1985	498	68	0	518	64	0	-	-	-	-	-	-	-	-	-	-	650 ^b
1986	990	69	0	-	-	-	-	-	-	-	-	-	-	-	-	-	69 ^b

^a Dash (-) indicates missing or incomplete data

^b Incomplete returns from brood year escapement

Appendix A.17. Togiak River sockeye salmon escapement and return by brood year including estimated interception catch from Japanese mothership fishery and South Peninsula June sockeye fishery.

Brood Year	Escapement	Return by Age Group (in thousands)														Total	
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4	
1950	a	-b	-	-	-	-	-	-	-	0	31	0	0	0	0	0	31 ^c
1951	a	-	-	-	-	-	0	109	58	0	0	9	0	0	0	0	176 ^c
1952	a	-	-	0	168	0	0	58	9	0	0	6	0	0	0	0	241 ^c
1953	a	0	0	1	31	0	0	84	8	0	0	16	0	2	0	0	143
1954	a	0	0	0	20	0	0	146	12	0	0	0	17	0	0	0	194
1955	a	0	0	0	136	0	0	0	186	8	1	38	0	0	0	0	369
1956	225	0	0	0	4	104	0	306	22	0	1	13	0	0	0	0	450
1957	25	0	2	9	48	0	0	69	20	0	0	36	1	0	0	0	187
1958	72	0	1	3	68	0	0	115	59	0	0	25	0	0	0	0	271
1959	210	0	0	0	141	0	0	92	55	0	0	7	0	0	0	0	296
1960	163	0	0	3	191	0	0	276	22	0	0	52	0	0	0	0	545
1961	122	1	0	3	85	0	0	216	15	0	1	19	0	0	0	0	340
1962	62	0	0	7	48	0	0	103	4	0	0	8	0	0	0	0	170
1963	116	0	0	2	43	0	0	66	19	0	0	24	0	0	0	0	153
1964	105	0	0	1	43	0	0	84	41	0	0	6	0	0	0	0	175
1965	96	0	0	2	154	0	0	181	31	0	0	37	0	0	0	0	406
1966	104	1	0	6	200	0	0	420	4	0	1	9	0	0	0	0	642
1967	81	1	0	6	18	0	0	99	16	0	1	40	0	0	0	0	181
1968	50	0	0	1	49	0	0	190	6	0	3	13	0	0	0	0	263
1969	117	0	0	5	28	0	0	142	25	0	3	12	0	0	0	0	216
1970	203	0	0	1	54	0	0	226	55	0	1	70	0	0	0	0	409
1971	200	0	0	4	106	0	0	317	62	0	1	68	0	2	0	0	561
1972	79	0	0	2	93	0	0	150	21	0	46	56	0	0	0	0	369
1973	107	1	0	10	151	0	0	378	32	0	1	14	0	0	0	0	586
1974	104	0	0	1	256	0	0	321	22	0	4	52	0	3	0	0	660
1975	181	0	0	4	253	0	0	825	87	0	2	58	0	0	0	0	1230
1976	189	0	0	2	189	0	0	534	142	0	4	162	0	0	0	0	1033
1977	163	0	0	3	252	0	0	638	13	0	3	12	0	0	0	0	922
1978	306	0	1	6	146	0	0	434	66	0	1	25	0	0	0	0	680
1979	198	2	0	1	266	0	0	404	14	0	0	7	0	0	0	0	695
1980	527	0	0	0	51	0	0	298	13	0	1	11	0	0	0	0	374
1981	307	0	0	0	61	0	0	293	6	0	0	16	0	0	0	0	377
1982	289	0	0	0	96	0	0	244	13	0	5	26	0	0	0	-	385 ^c
1983	213	0	0	2	265	0	2	925	9	0	2	21	0	-	-	-	1226 ^c
1984	151	0	0	14	21	0	0	109	4	0	-	-	-	-	-	-	149 ^c
1985	145	0	0	7	35	0	-	-	-	-	-	-	-	-	-	-	42 ^c

^a Escapements not monitored

^b Dash (-) indicates missing or incomplete data

^c Incomplete returns from brood year escapement

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